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COBALT AND COPPER IN RUMINANT NUTRITION*

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As the successful use of supplements containing cobalt for the prevention of bush sickness in stock has given rise to a considerable amount of publicity in which the original source of information has been largely lost sight of, a brief résumé of the sequence of events that led to this application seems desirable.

The apparently essential nature of cobalt in the nutrition of ruminants was first suggested by a group of workers in the Council for Scientific and Industrial Research Nutrition Laboratory in the University of Adelaide, from experimental findings during the investigation of the aetiology of "coast disease," a malady which affects sheep confined in their grazing to the highly calcareous shell sand littoral of southern Australia. The dramatic response and rapid restoration observed to supervene when minute amounts of cobalt (1 mgm. a day as soluble salt) were administered to seriously affected animals was announced at the Australian and New Zealand Association for Advancement of Science during the January meeting in 1935, when the close resemblance that coast disease bore to stock ailments known in different parts of the world as bush sickness (New Zealand), enzoötic marasmus (Western Australia), pine (Cheviots and Inner Hebrides), nakaturuitis (Kenya), and salt sickness (Florida), was again stressed. This address was published a few months later.

The appearance of symptoms of lethargy, progressive wasting and anaemia in ruminants confined to certain restricted areas, and their rapid alleviation if the affected flocks are changed to a different type of country, has been recognised for many years. The description in 1807 of pining, daizing or vinkish by the Ettrick shepherd, James Hogg, suggests that this malady results from a deficiency, for the ". . . distemper . . . affects sheep confined to some districts . . . but removing them to fine land cures them immediately." The symptoms he reported later (1831) are those commonly recognised in the diseases mentioned above. McGowan and Smith's study of the distribution of pine disease in areas derived from porphorytic rocks on the Scottish side of the Cheviots, and Greig and Dryerre's investigation of the lethargic wasting as it occurs among sheep grazing exclusively on the shell sand beaches of the Isle of Tiree, led to the recognition of its similarity to bush sickness.

The New Zealand bush sickness, which occurs in areas usually defined by relatively recent volcanic showers, was referred to in the early reports of Park (1806) and later by Gilruth (1900). Guided by the hypothesis that the associated anaemia resulted from iron deficiency, Aston and his collaborators observed the benefit which followed dosing affected animals with massive amounts of iron salts, which, in the light of our present knowledge, it seems probable were contaminated with traces of other elements. For economic reasons, Aston suggested the use of the naturally occurring hydrated iron oxide, limonite, and this material, providing it originated from certain deposits, undoubtedly helped to control the disease.

The investigations of Filmer (1933) of a similar malady, enzoötic marasmus, affecting both cattle and sheep grazed continually over certain highly ferruginous sandy loams of the Denmark district of Western Australia, led to the conclusion that while large doses of limonite prevented the occurrence of the malady and restored affected animals to normal health, pure iron salts were ineffective. Later, Filmer, in collaboration with Underwood, found hydrochloric acid extracts of limonite to be as active as the material itself, and the potency of these was unimpaired on removal of all but the faintest traces of iron. Underwood fractionated these extracts further; but, owing to the vagaries of the chemical methods and his dependence on so-called pure chemicals, the issue was temporally obscured.

Meanwhile, the investigations of coast disease had proved that therapy with carefully purified iron salts, either alone or in conjunction with copper and with liver extract, failed to arrest the progress of the symptoms. The maintenance of health of sheep which had free access to a complex salt mixture containing cobalt while

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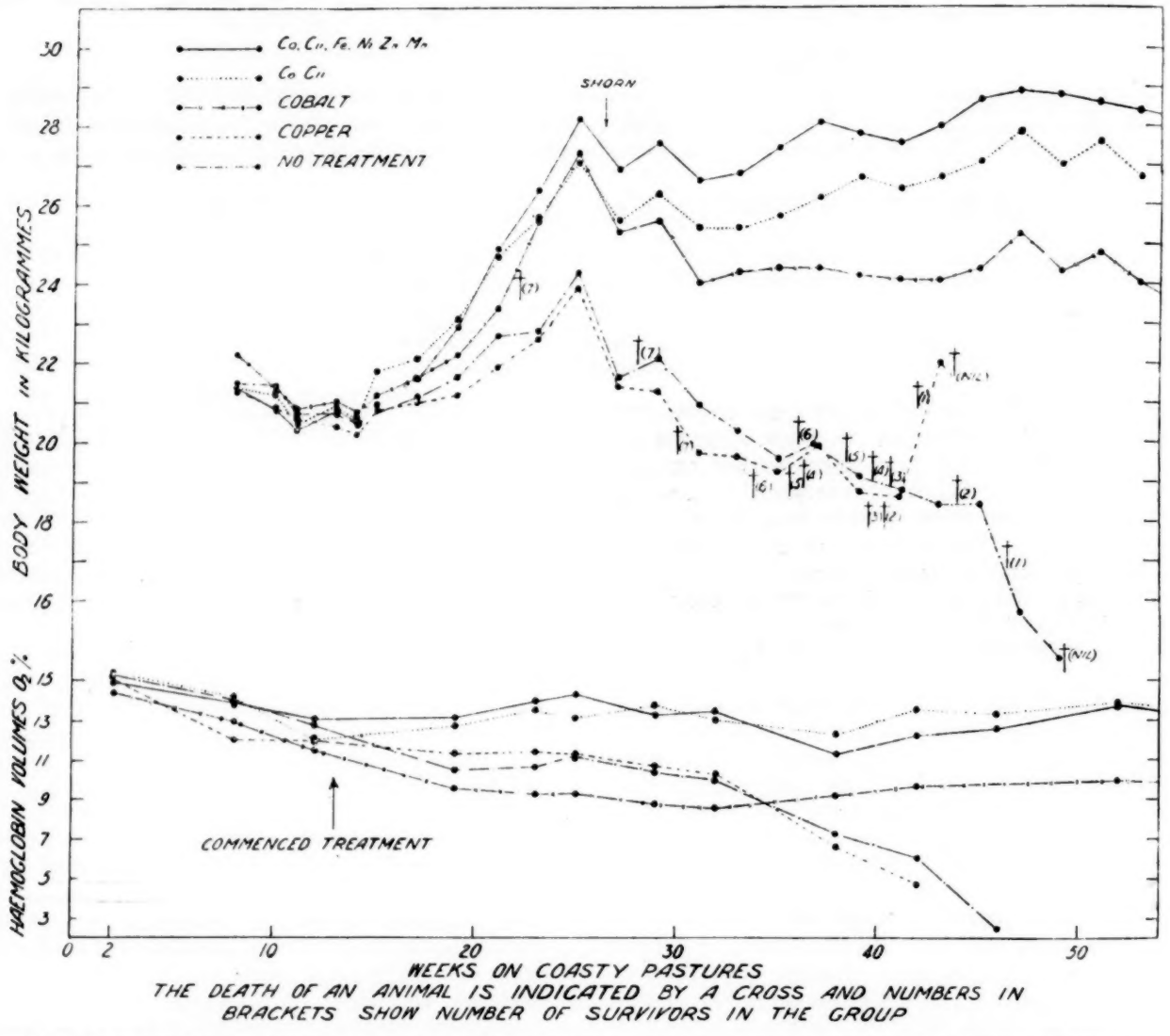
Co. Cu. Fe. Ni. Zn. Mn.
Co Cu
COBALT
COPPER
NO TREATMENT
SHORN
BODY WEIGHT IN KILOGRAMMES
HAEMOGLOBIN VOLUMES %
COMMENCED TREATMENT
WEEKS ON COASTY PASTURES
THE DEATH OF AN ANIMAL IS INDICATED BY A CROSS AND NUMBERS IN BRACKETS SHOW NUMBER OF SURVIVORS IN THE GROUP

EFFECT OF COBALT AND COPPER ON YOUNG SHEEP DEPASTURED ON THE LITTORAL WHERE COAST DISEASE OCCURS. EACH MATCHED GROUP CONTAINS EIGHT LAMBS AGED 8 MONTHS AT BEGINNING OF THE EXPERIMENT. ALL WERE DEPASTURED TOGETHER, THE TREATED GROUPS RECEIVING THEIR SUPPLEMENTS IN AQUEOUS SOLUTION THREE TIMES WEEKLY. THE SYMPTOMS APPEAR AFTER ABOUT 20 WEEKS AND ACCOUNT FOR ALL WHICH DO NOT RECEIVE COBALT IN ABOUT 50 WEEKS. THE INCAPACITY OF COPPER WHEN ADMINISTERED ALONE TO PREVENT THE PROGRESS OF THE SYMPTOMS AND ITS EFFECT WHEN SUPERIMPOSED ON COBALT TREATMENT IS OBVIOUS.

Reproduced from *Bull. Council Sci. Ind. Research (Australia)*. (Marston and McDonald).

pastured on affected country was observed, and the publication of the production of polycythaemia in rats by minute amounts of cobalt by the Walthners, led to the experiments that resulted in the immediate response which cobalt therapy brought about in animals suffering from coast disease. The implication that sheep suffering from enzoötic marasmus would react similarly to cobalt was amply confirmed by Underwood and Filmer's demonstration following a short visit of Dr. Underwood to the Nutrition Laboratory, Adelaide, that small doses of cobalt rapidly restored affected animals to normal health.

Reports of the variability of the response of bush-sick animals to treatment with massive doses of limonite or of soluble iron salts led to the conclusion that Aston's iron deficiency hypothesis, although vigorously defended, was untenable. Rigg and Askew were unable to find a significant difference in the iron content of pastures from bush-sick and healthy areas. They demonstrated later that iron-free extracts from healthy soils would completely prevent the onset of untoward symptoms in sheep grazing on bush-sick country. Following the announcement of the effect which cobalt exerted on animals suffering from coast disease, Askew and Dixon (1936) demonstrated that cobalt supplements were completely effective as a preventive and cure of bush sickness as it occurs at Morton Mains, and since then the treatment has been widely

applied with obvious success in New Zealand.

The part undoubtedly played by cobalt in restoring and maintaining health in sheep suffering from the three maladies, coast disease, bush sickness and enzoötic marasmus, which although strictly regional, occur in markedly different terrain suggests that pine, nakaturuitis and salt sickness, which apparently evidence identical symptoms, may be the result of a breakdown in the chain of metabolic events for which cobalt provides a link; or not unlikely, they may indeed be of identical aetiology, resulting from a metabolic disturbance caused directly from a partial or absolute shortage of cobalt in the fodder of the affected areas.

Coast disease, in some regions, is a rather more complicated syndrome than that resulting from cobalt deficiency. While it shares the symptoms of lethargy, wasting and anaemia with the other maladies which respond to a small supplement of cobalt, sporadic outbreaks of ataxia are frequently observed in young lambs born of ewes which have spent a relatively short sojourn during their pregnancy on certain parts of the littoral.

This condition, which results from degenerative changes in the spinal cord, although strictly regional also, is not invariably confined to areas where coast disease is enzoötic. While the resulting lesions of demyelination are anatomically related to those observed in the enzoötic paraplegia (renguerra) reported to occur among lambs bred in certain areas in the Peruvian Andes, and to those of swayback, which accounts from time to time for many lambs in certain parts of England, the underlying cause may possibly be distinct. The similar condition, enzoötic ataxia of lambs in the Gin Gin area of Western Australia, which Bennetts has recently attributed to copper deficiency and shown to be overcome if the pregnant ewes on this area are supplemented with small amounts of copper, is, however, apparently closely related aetiologically with that observed on the affected littoral; for our experiments have amply demonstrated that small amounts of copper are essential to maintain cobalt-treated animals in good health while depastured on the areas where both ataxia and coast disease occur, notwithstanding the fact that supplementing with copper neither alleviates the symptoms of coast disease nor prevents the appearance of the anaemia and fatal decline if unaccompanied by cobalt.

The findings focus attention again on the possible physiological importance of those traces of elements, usually considered exotic, which have been demonstrated to be constantly present in living tissues, and furthermore, the discovery adds yet another example of the remarkable species difference in the behaviour of living organisms towards the nutritional environment; which, with little doubt, reflects subtle differences in the nature of the underlying metabolic processes.

The fact that horses exhibit no untoward symptoms when confined in their grazing to littoral tracts where ruminants will progressively decline and expire if left unsupplemented with cobalt is at present a fascinating subject for speculation, which may be solved when our knowledge of the rôle which cobalt assumes in the normal physiological function of some animals is extended.

A full description of the investigations of coast disease appears in monograph form in a Bulletin of the Council for Scientific and Industrial Research (1937). The references in the literature to similar maladies mentioned above are discussed in further detail there.

The Use of Mineral Oil as a Vehicle for Oil of Chenopodium in Equines

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In the treatment of strongylosis in equines it is customary to use linseed oil as a vehicle for oil of chenopodium after prescribing a fast of 36 hours. To the writer both the use of linseed oil, and a fast of as long as 36 hours, seem undesirable.

It is not possible to reduce materially the total contents of the caecum and colon, and the purpose of fasting seems to be to empty the stomach to enable the drench to pass quickly to the large bowels. A twelve-hour fast is surely adequate for this purpose—and long fast only debilitates an already weak patient.

A comparison of linseed and mineral oils shows the following disadvantages in the former:

(1) Severe purgation may result from the moderate use of linseed oil.

(2) Linseed oil necessitates the patient being off duty for a considerable period to enable it to recover from the treatment.

(3) Purgation means dehydration and no clinical advantage arises from its effects.

(4) Is it not worth considering a suggestion put to me by Mr. G. S. Muir, B.V.Sc., M.R.C.V.S., that the purgative action of linseed oil is due to its causing an acute attack of indigestion?

Mineral oil, on the other hand, does not cause severe purgation, and if given at the rate of one pint per 800 lb. of live weight is merely laxative. It is not debilitating, nor dehydrating, and in a series of 50 ponies no oncome of poisoning from toxic absorption was seen with a dosage of 12 ml. of oil of chenopodium per 800 lb. pony.

Ponies treated with oil of chenopodium and mineral oil as described need not be taken out of light work during treatment, and further, they will rapidly recover condition and will show a marked diminution in the faecal egg count.

ABSTRACTS

[**Fluorine Metabolism in Rats and Bovines.** Du Toit, P. J., Smuts, D. B., and Malan, A. I. (1937.) *Onderstepoort J. Vet. Sci. and Anim. Indus.* **8.** 1 and 2. 359-374.]

At Onderstepoort definite toxic symptoms have been observed by feeding rock phosphate to cattle as a calcium and phosphate supplement. The injurious effects of rock phosphate have invariably been attributed to its fluorine content, and it was the object of the present investigation to study the metabolism of fluorine in bovines and rats. It was found that on rations to which F has been added, cattle retain 0·2 gm. and rats 1 mgm. of F per day. Fluorine caused a decreased retention of both Ca and P in rats, but a slight increase in Ca retention and a pronounced decrease in P retention in bovines. The practical interest of these observations is that mineral compounds containing fluorine when substituted for bone meal for livestock may actually help to produce osteomalacia instead of preventing it.

N. J. S.

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[**The Influence of Improvements of Pastures and Rotational Grazing on Parasitism, Body Weight, and Fleece Production in Cross-bred Sheep in Tasmania.** Clunies Ross, I., Chamberlin, W. E., and Turner, Helen. (1937.) *J. Coun. Sci. and Indust. Res.* (Australia). **10.** 4. 313-326.]

In this paper, results are given of field trials over a period of three years in which investigations were made on (1) the effect of feeding meatmeal and clover-grass hay supplements throughout the year to sheep on natural pasture, both with and without administration of carbon tetrachloride for the control of internal parasites, and (2) the effect of varying systems of rotational grazing contrasted with continuous grazing.

The principal interest of the first experiment centres round the contrast in body weight and fleece production on improved compared with natural pasture, and the possible influence of drenching with carbon tetrachloride. It was found that lambs on improved pasture made better weight gains and produced approximately 2 lb. more wool per head than similar lambs on natural pasture. Moreover, lambs on natural or improved pasture made greater growth gains and produced a greater weight of wool when drenched monthly with carbon tetrachloride than when undrenched. In the following year it was found that lambs maintained on the natural pasture during the previous year, did not make good their early failure in development when transferred to improved pastures. A third field trial demonstrated very definitely the superior effects of rotational grazing systems over continuous grazing on similar pastures on body weight, fleece production and parasitic infestation.

N. J. S.

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[**The Effect of High Protein Feeding on Milch Cows.** Seshan, P. A. (1937.) *Indian J. Vet. Sci. and Anim. Husb.* **7.** 4. 289-298.]

Conflicting results have been published by various workers on the relationship between high protein intake and the milk yield and composition of the milk in dairy cattle. The author carried out an experiment to test the response of cows to a high protein intake under Indian conditions. Two groups of six cows were fed a production ration containing 20·7 per cent. and 29·1 per cent. of digestible crude protein respectively. No difference was observed between the two groups as regards food consumption, milk yield or body weight. The milk from the higher protein group showed a slight tendency to be richer in non-protein nitrogen, ash and lime contents.

N. J. S.

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[**Ultrafiltration and Its Applications in the Study of Viruses.** (Trans. title.) Galloway, I. A. (1938.) Chapter from "Les Ultravirus des Maladies Humaines." Libraire Maloine. Paris. 1019-1048. 3 figs. 2 tables. Numerous references.]

Ultrafiltration is defined as filtration through gels the pores or interstices of which are capable of determining a total or partial retention of colloidal particles present in a dispersed system. The methods of ultrafiltration can be used for the fractionation and study of the composition of a dispersed system, for exact measurement of the size of dispersed particles and finally for purification and concentration of dispersed systems such as suspension of virus, bacteriophage or enzymes.

The author gives the history of the development of ultrafiltration by various workers leading to the introduction by Elford (1931) of "gradocol" membranes. Elford observed that acetone and amyl alcohol had contrary dissolving actions on nitrocellulose. Although either of these reagents in combination with ethyl alcohol and ether is an excellent solvent, both together cause coagulation of nitrocellulose. By adding various proportions of acetone and amyl alcohol to a standard solution of nitrocellulose in ethyl alcohol and ether, gels of varying density may be obtained, the mean diameter of the pores ranging from 3 μ to 10 μ (1 μ=one thousandth of a millimeter, 1 $m\mu$=one thousandth of 1 μ). The methods of manufacture of the membranes, determination of their pore

size, sterilisation, preservation and use are described. The sizes of many viruses, ranging from 400 $m\mu$ for that of psittacosis to 40 $m\mu$ for louping-ill and 25 $m\mu$ for foot-and-mouth disease, have been determined by the use of these membranes. With some viruses, the results obtained by ultrafiltration have been compared with those obtained by high speed centrifugation; the sizes determined by this latter method have been found to approximate closely to those determined by ultrafiltration and also to those determined by Barnard's method of ultra-violet light photography.

Tables showing the sizes of many viruses pathogenic for man and animals, various bacteriophages and some proteins are given.

C. McG.

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[**I.—Mouldy Corn Poisoning in Horses.** Schwarte, L. H. (1938.) *J.A.V.M.A.* **92.** 152-158. **II.—Further Observations on Oat Hay Poisoning.** Thorp, F., Jr. (1938.) *Ibid.* **92.** 159-170.]

I.—A disease of horses is described which clinically resembles specific encephalomyelitis but is non-infectious and due to the ingestion of mouldy corn. The brain tissue of affected animals shows oedema, haemorrhage and varying degrees of degeneration and necrosis, particularly of the white matter of the cerebral hemispheres. Cases of poisoning usually occur between November and May. No specific treatment is known nor has the toxic principle been isolated.

II.—Further experiments on feeding damp mouldy oat hay to cattle were carried out. The animals died with symptoms resembling HCN poisoning but this substance could not be detected in the hay and only traces of it were found in the contents of the rumen of some of the animals. Sheep and horses were not affected by the hay. Aqueous, alcoholic, acid and alkaline extracts of the hay were harmless to laboratory animals.

J. A. N.

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[**Clinical Picture of Foot-and-Mouth Disease in the Goat.** (Trans. title.) Horeker. (1938.) *Berl. tierärztl. Wschr.* 2. 7-20.]

The author reviews recent contributions to the study of foot-and-mouth disease in the goat. In 1920, a serious epidemic occurred among goats in Germany and the disease was then extensively studied. Experimental investigations have been carried out by Reppin on the island of Riems.

Diagnosis is not easy in the goat; the general condition of the animal often remains unaltered, and a very careful search has to be made in order to find vesicles on the tongue or feet. The average incubation period is two to seven days. The hair appears harsh and staring, giving the head a swollen appearance; the animal may be dull but the appetite is often not affected. The characteristic smacking of the lips is seen and a catarrhal rhinitis may appear. Symptoms of colic are sometimes shown and diarrhoea may supervene. Pinhead-sized vesicles appear on the tongue, udder and feet: the epithelium is very thin and easily ruptured, and a small erosion is left on the epithelial surface. Healing of these ulcers is not so rapid as it is in cattle.

The condition in the feet does not always produce lameness; secondary infection is not common in goats. The milk secretion is reduced, and the milk becomes thicker and of an unpleasant taste. Abortion of dead kids is a common feature.

A differential diagnosis is established between foot-and-mouth disease and catarrhal stomatitis (plant and phosphorous poisoning), papular stomatitis of cattle, herpes and goat pox.

E. C. H.

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[**Radiology of the Oesophagus of the Horse.** (Trans. title.) Hellmich. (1938.) *Deuts. tierärztl. Wschr.* 2 and 3. 17-21; 38-41.]

A detailed account is given of the application of radiology in the examination of the normal and diseased oesophagus in the horse. The author states that the probang or stomach tube is very useful in determining the position of foreign bodies, etc., in the oesophagus, but the size and shape of such obstructions cannot be estimated.

The cervical portion of the oesophagus may be examined with ease by means of the radiograph. The part extending from the entry of the thoracic cavity to the third or fourth dorsal vertebra cannot be examined as the thickness of the shoulder girdle interferes with the passage of the light rays. The remaining part as far as the diaphragm is clearly demonstrable.

Prior to the X-ray examination, a dose of 500 c.c. barium sulphate suspension is introduced by means of a stomach tube. By the use of this contrasting medium, peristaltic movements of the oesophagus may be observed on a screen and conditions such as hypertrophy, stricture, diverticula and dilatation, may be diagnosed. In the normal oesophagus the barium meal passes quickly into the stomach and the oesophagus returns to its original appearance of a thin hosepipe-like structure with parallel sides. In the dilated or obstructed oesophagus the barium remains *in situ* for a considerable time and gathers at the lowest level of the tube. In the diagnosis of foreign bodies a sound is introduced into the oesophagus until

the obstruction is reached and the exact position and size of the mass may then be seen.

Records of three typical cases of oesophageal dysfunction in the horse are given. In each case the application of radiology as an aid to the correct diagnosis of the condition is indicated.

E. C. H.

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[Observations on the Morphology and Life-History of Gaigeria pachyscelis Raill. and Henry, 1910: A Hookworm Parasite of Sheep and Goats. Ortlepp, R. J. (1937.) *Onderstepoort J. Vet. Sci. and Anim. Indus.* **8.** 1. 183-212.]

Ortlepp records his observations on the morphology and life-history of *Gaigeria pachyscelis*. Besides being very common, it is one of the most serious parasites affecting sheep in South Africa where it is more or less confined to the more arid regions, namely, the areas extending from South West Africa through N.W. Cape Colony to the Bechuanaland Protectorate; in addition it has been recorded from the Congo, India and Java. It also infests goats and although it has been reported from cattle the correctness of these reports is open to doubt; the author was unable to find it in cattle or, experimentally, to infect calves. He records it, for the first time in wild game, from an Indian antelope imported into the Johannesburg zoological gardens.

Ortlepp amplifies, in a number of points, the detailed morphology of the adult parasites previously given by other authors. In his life-history studies he mentions that the large, brownish, distinctively-shaped eggs are passed in the host's faeces in the 16- or 32-celled stage and hatch in 36 to 48 hours at 26° C. Detailed morphological descriptions of the larval stages are given and it is noted that the third, infective, ensheathed larval stage may be reached in eight days under suitable conditions of aeration, humidity, food and temperature. These larvae are active climbers, positively photo- and thermotropic but show a feeble resistance to drying. The author produces evidence to show that such larvae are skin penetrators, infection of the host being through the skin; all attempts to infect animals experimentally, *per os*, were unsuccessful.

Once within the host the larvae migrate, presumably *via* the blood stream and heart, to the lungs where they remain about 14 days, growing and eventually moulting to produce fourth-stage larvae. This stage is characterised by their possessing a globular, provisional mouth capsule containing, at its base, a pointed dorsal tooth and two small, sub-ventral, triangular teeth; as time passes the sexes may be differentiated, the females having long pointed tails and the males short, stumpy tails. These larvae leave the lungs, migrate up the trachea and are swallowed and reach the small intestine where they attach themselves to the villi and suck blood. During the fifth to eighth weeks after infection the larvae grow and prepare to undergo their last moult and, during this transition period, the provisional buccal capsule is replaced by that of the adult worm, while the bursa of the male becomes differentiated. After completion of the ecdysis the young adults continue to grow, becoming sexually mature from about the tenth week after infection.

In a concluding discussion, the author makes a comparison, with related hookworms, of the hatching of the egg, the biology of the infective larva and the development of the mouth capsules; he also considers that the status of the genus *Gaigeria* should be maintained although some authors are of the opinion that *Monodontus*, *Monodontella* and *Gaigeria*, are congeneric and should fall into the first-named genus. Incidentally, Ortlepp mentions that he was able to set up a cutaneous infection in 25 out of 27 sheep with *Bunostomum trigonocephalum*; up to the present it has generally been accepted that infection with this related hookworm only takes place *per os*.

J. N. O.

SERIOUS SHEEP SCAB OUTBREAK IN EIRE

The whole of Co. Leitrim and part of Co. Cavan are affected by an Order of the Department of Agriculture, in Eire, prohibiting the sale of sheep or their movement, owing to an outbreak of sheep scab, the position created by this necessity being especially serious in view of the big fairs in May and June. At a meeting of the Leitrim County Council it was alleged that owners of flocks throughout Leitrim did not avail themselves of the dipping facilities provided and the Department's inspectors found that the disease had assumed alarming dimensions. Arrangements are being made to enlist the assistance of the Civic Guards in the enforcement of the Order.

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ANATOMY OF THE OX

While a considerable amount of work has been done on the dog and horse, so that the anatomy of these animals is now fairly well known, not nearly so much has been done on cattle. In a recent publication, H. N. Chelva Ayyangar (Imp. Council Agri. Research, Sci. Monograph No. 11, 1937), has provided a detailed account of the course, constitution and distribution of the nerves supplying the levator anguli scapuli and rhomboideus muscles and of the formation of the phrenic nerve in the ox. In the same monograph are included descriptions of forty-seven deviations from the normal course or constitution of various arteries and nerves in the same animal. Thirty-seven of these have already appeared separately, but are here gathered together. The monograph is fully illustrated by 71 diagrams or photographs of the actual dissections.—*Nature*.

REPORT

City of Stoke-on-Trent

REPORT OF THE VETERINARY OFFICER FOR THE YEAR 1937

This report is conveniently divided into three sections:—

(1) *Administration of Abattoir and Meat and Food Inspection*:—

The provision of a municipal abattoir for the city appears to be within measurable distance. Mention is made in the report of a visit to the Sheffield abattoir, but it was noted that cattle and sheep were slaughtered in the same booth.

A table is given of the carcases and parts of carcases surrendered and condemned during 1937, 271 bovine carcases being condemned for tuberculosis. It would be of interest to veterinary officers engaged in similar work if this table showed the proportion of cows, heifers, bulls and bullocks, so affected.

Similarly, a table detailing the cause of condemnation of parts of carcases and of organs would be of value, as, for example, the proportion of pigs' heads condemned for tuberculosis, and the relative frequency of actinomycosis and actinobacillosis in the bovine head.

The total of meat, offal and other foodstuffs condemned during the year was 182,362 lb. Of the total carcases and parts of carcases of cattle condemned, 59·2 per cent. were affected with tuberculosis.

(2) *Supervision of Milk Supplies*:—

There are 146 dairy herds within the city, housing 2,095 cows. The report states that endeavour has been made to increase the frequency of clinical inspections and it is suggested that such inspections should be carried out at least every two months, followed by post-clinical herd sampling. This would appear quite practicable in cities where the dairy herds are grouped within short travelling distance of each other.

The advantage of frequent clinical inspection is shown by a table giving the percentage of bulk samples containing tubercle bacilli. Three hundred and eighty-three samples were taken from herds within the city, and 4·6 per cent. contained tubercle bacilli; 181 samples of milk produced outside the city showed 11·6 per cent. to be infected.

There are 23 accredited milk producers within the city and steam sterilisation is insisted on. In the opinion of the reviewer no accredited licence should be granted without this provision.

(3) *Diseases of Animals Acts and Orders*:—

Under the Tuberculosis Order, 66 animals were dealt with during the year. Of these, 20 were affected with tuberculosis of the udder and 46 with chronic cough and clinical signs of tuberculosis.

From the amount of salvage received it would appear that in no case were any of the above carcases passed for human consumption, although 56 were classified as "disease not advanced" on *post-mortem* examination.

DANISH NATIONAL AGRICULTURAL EXHIBITION

To celebrate the one hundred and fiftieth anniversary of peasant emancipation, Denmark is organising a great National Agricultural Exhibition at Copenhagen this year from June 17th to 26th. Announcing this national event at a luncheon, on April 7th, at the Danish Club, London, Count Reventlow, the Danish Minister to this country, said that never before in the history of his country had such a comprehensive and ambitious exhibition been organised. It would show for the first time the history, social condition, and scientific efficiency, of Danish agriculture. King Christian X had given the undertaking his patronage and would perform the opening ceremony.

It was in June, 1788, that the villenage system, which bound the peasants to the estates of their overlords, was abolished. To-day, 150 years later, the descendants of those peasants are the small farmers who are the backbone of the Danish agricultural industry. Denmark, a country little bigger than Wales, now produces a quarter of the entire world's exports of butter and eggs, and two-thirds of the bacon imported into this country from foreign lands.

The exhibition is no mere agricultural show; it is a truly national effort in which the whole kingdom will take part, including the remote Faroe Islands and the Greenland Settlements.

In the open-air theatre, used for spectacles and displays, will be paraded the prize beasts—horses, cattle, sheep and pigs. Poultry will be represented by a big show; and special sections will be devoted to rabbit breeding, bee keeping and the breeding of fur-producing animals, all important rural industries.

Apart from the Dairy Section, at Bellahoj, a Dairy Show is being held at the Forum Hall in the centre of Copenhagen. Here butter, cheese and processed milk will be shown and every stage of their production demonstrated. Over 1,500 Danish dairies are taking part, butter, eggs and cheese being some of the country's most important exports. The research and application of scientific discoveries in planning and marketing, intensive production and grading, will be shown.

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Veterinary officers called to examine a Sopworth (Wilts) farmer's cow believed to be suffering from foot-and-mouth disease, spent two hours catching the frightened animal with the help of a number of men. It was then found that the slobbering at the mouth which had aroused suspicion was caused by a flattened tin can wedged at the back of the animal's jaws.

In Parliament

The following are among the questions and answers recorded in the House of Commons recently:—

Attested Herds

Mr. R. Gibson asked the Minister of Agriculture what counties in England and Wales, respectively, contain the largest number of animals in attested herds; how many such animals are in each of these counties, respectively; to what breeds of cattle do these animals belong; and whether he has any statement to make on the subject?

Mr. W. S. Morrison: The counties in England and Wales which contain the largest numbers of animals in attested herds are as follows:—

County.	Number of Attested Herds.	Approximate Number of Cattle in Attested Herds.	Breeds of Cattle in Attested Herds.
England—			
Somerset...	60	3,050	Various.
Berks ...	34	2,450	Various.
Essex ...	36	2,150	Various.
Surrey ...	34	2,150	Various.
Hampshire	38	1,950	Mainly Guernsey and Jersey.
Gloucester	31	1,800	Various.
Wales—			
Carmarthen	336	9,450	Mainly Shorthorn.
Pembroke	114	3,100	Various, with Shorthorn predominating.
Cardigan...	72	1,950	Mainly Shorthorn.

With regard to the last part of the question, the herds most suitable for tuberculosis eradication are those maintained by breeding within the herd. Such herds are numerous in the counties of Carmarthen and Pembroke, in which the largest numbers of attested herds are located.

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Milk

Wing-Commander James asked the Minister of Health whether, having regard to the divergence of opinions upon matters of fact that are expressed by various authorities upon bovine tuberculosis, pasteurization and other matters affecting the supply and consumption of milk, he will appoint a committee to investigate and to report upon these problems?

Sir K. Wood: I am advised that the facts with regard to bovine tuberculosis and pasteurization in relation to the milk supply are sufficiently well established by inquiries such as that of the committee of the Economic Advisory Council on Cattle Diseases, of which I am sending my hon. and gallant Friend a copy.

Wing-Commander James: Is my right hon. Friend aware that what has been done has not been sufficient to enable regulations to be made by the Minister of Agriculture, and if I bring further information to his attention will he consider giving this matter further consideration, inquiry and action?

Sir K. Wood: I rather gather that my hon. and gallant Friend ought to communicate with my right hon. Friend the Minister of Agriculture.

Captain Heilgers: Is the Minister going to do anything to discourage biased propaganda on the question of pasteurization by the medical authorities?

Sir K. Wood: That is a different matter.

Sir A. Wilson: Is the Minister aware that there has been no publication of any of the evidence submitted to the Cattle Disease Committee, which did not apply its mind to the question of human tuberculosis but to cattle diseases, and that there has been no evidence before us except this—

Mr. Speaker: The hon. Member is giving information.

MAN AND ANIMALS IN GREAT BRITAIN

A meeting arranged by the University of London Animal Welfare Society (U.L.A.W.S.) was held in the Beveridge Hall of the University of London, on March 22nd, to discuss "Man's Relation to Nature and His Response," with reference to "the Survey and Regulation of British Fauna." The proceedings are summarised in *Nature* as follows: "The Chairman, Sir P. Chalmers Mitchell, said that the so-called 'balance of Nature' is a myth and has not existed since glacial times, when there were no animals in Britain to be balanced. We interfere too much for there to be one and interference is no good without knowledge. The Marquess of Tavistock showed how conflicting interests make legislation difficult. Fruit farmers and the owners of grouse moors oppose the protection of bullfinches and peregrine falcons respectively. There is no need to fear the introduction of wild birds for, unlike alien rodents, they find competition too strong. As regards method of control, there is no difficulty in shooting deer in the highlands, but in the wooded lowlands hunting is kinder. Shooting is often unkind to foxes owing to the uncertainty of aim. Otters are neutral in sporting streams, killing some game fish but keeping down eels; but they are harmful in trout hatcheries and to ornamental wild fowl. Protecting stoats and weasels to keep rabbits down is a fallacy. Professor F. A. E. Crew referred to the need for research on the ecology of British mammals; he suggested that we should have something like the U.S. Biological Survey, that the Bureau of Animal Population should be supported, and the staffs of museums and university departments should be enlarged. Sir Roy Robinson, Chairman of the Forestry Commission, said that complaints about his treatment of animals were sentimental and not based on knowledge. Rabbits should be exterminated. There are too many deer and foxes. The only mammal in need of protection is the pine marten, and he would like to harbour them. All birds, except black-game and caper cailzie, should be encouraged in forests. Other speakers referred to the desirability and the difficulties of rabbit extermination in various parts of Great Britain."

* * * * *

About 30 per cent. of the meat sold in the United States is produced and consumed within a State and therefore is not subject to the Federal meat inspection law, which extends only to slaughtering and processing plants which prepare meat and meat food products for entry into interstate or foreign commerce.—*Municipal Journal.*

The Veterinary Record

April 30th, 1938.

Report of the Poultry Technical Committee for Great Britain

In the *Veterinary Record* of February 12th, 1938, there appeared an editorial dealing briefly with the report of the Poultry Technical Committee for Great Britain which had just been published. The N.V.M.A. Advisory Committee on Poultry Diseases has now considered the report in detail and, following the recommendations of the Advisory Committee, several resolutions* were discussed and adopted at the last meeting of Council, N.V.M.A.

The report, taken as a whole, must be acknowledged as an excellent analysis of the present unsatisfactory state of the poultry industry and we have at last an official account of the causes which have led up to the position in which the industry finds itself. One can have nothing but the highest admiration for the Technical Committee concerning the task it has accomplished.

Our chief concern is with regard to the relationship between the veterinary profession and the poultry industry. Let us admit at once that we as a profession may not have given as much attention to the welfare of poultry as we have to that of other domesticated animals. One of the reasons for this is the rapid growth of the industry and, to some extent, the economic value of the individual fowl has also had an influence. On the other hand, however, it must be admitted that the veterinary profession has played a very important part in contributing to the knowledge of specific infections in poultry for it can be rightly claimed that much of the research into such conditions in this and other countries has been the work of members of the veterinary profession. The result of such researches is shown in the comparative ease with which some of the well-known infectious diseases are being controlled to-day.

*See page 521.

It is very evident, however, that the knowledge concerning nutrition, breeding, methods of management, etc., cannot be said to be in the same advanced state as that of specific disease and it is apparent that much more research into these subjects must be carried out before the poultry industry will be in a position of security. It is true that these subjects have been studied by competent workers but it would appear that still more concentrated efforts are required because of the highly artificial life which poultry are required to live for economic reasons.

It is gratifying to note in the report that the Technical Committee in its control scheme has considered veterinary inspection, for it shows that the committee is of opinion that the veterinary profession can be used to deal with diseases of poultry. The committee, however, only visualises the employment of veterinary surgeons when disease is already suspected in a flock. We feel that much more use can be made of the profession and that it is the duty and the right of the profession to play a leading part in the building up of healthy flocks in the country. The Technical Committee point out that the number of veterinarians possessing a specialised knowledge of poultry diseases is extremely limited and suggest that specialised courses of instruction, comprehensive in character, should be arranged. While we cannot agree entirely that only so very few members of the profession have a knowledge of poultry disease, we are convinced that the time has arrived when the veterinary colleges must pay much more attention to the study of poultry husbandry and the control of poultry diseases. With this end in view the N.V.M.A. Council passed a resolution at its last meeting in which the attention of the various veterinary colleges and the R.C.V.S. was drawn to the necessity of further opportunities being given to veterinary students for training in poultry subjects. In order to meet the requirements of the control scheme in which veterinary practitioners are to be used, the N.V.M.A. strongly advises its members to obtain the latest available knowledge both on poultry husbandry and on disease control. Letters have been addressed to all Divisions of the N.V.M.A. pointing out the necessity for the arranging of courses for their members and veterinary colleges have also been approached on the subject. We are happy to be able to state that the various veterinary colleges have given reassuring replies. We would draw attention

to a course in Poultry Husbandry and Disease Control, held during 1936 under the auspices of the North of England Division of the N.V.M.A., and we feel that if similar types of courses could be held in the near future at several centres, including veterinary colleges, veterinary surgeons attending them would receive a comprehensive training in the subjects.

We are not in entire agreement with the Poultry Technical Committee concerning its inspectorial organisation. The committee recommends the setting up of a Commission with many duties, one of which concerns the inspection of flocks in connection with the suspension or withdrawal of registration of distributing centres of chicks, eggs, etc. It is suggested that the area inspectors should be "well qualified in poultry husbandry, competent to detect external symptoms of ill-health in a flock and to judge of the general suitability of birds for breeding purposes," but "they would not have specialised veterinary knowledge." If the inspectors find evidence of disease, then a veterinary inspector would be called in. The N.V.M.A. visualised a type of area inspectorate and detailed its views to the Poultry Technical Committee in its written and oral evidence. The view held by the Association is that each area should be under the control of a veterinary officer for the inspection of poultry in health and in disease and that each veterinary officer should have under his direction a panel of veterinary practitioners (part-time) and a staff of full-time lay poultry inspectors "well qualified in poultry husbandry." A resolution to this effect has been sent from the N.V.M.A. to the Ministers of State concerned and we have been assured that the matter will receive consideration.

In connection with the Poultry (Stock Improvement) Commission for Great Britain and the Advisory Councils for England and Wales and for Scotland, suggested by the Poultry Technical Committee, the N.V.M.A. has made representations for the inclusion of members of the veterinary profession for, while the main duties of these bodies must largely be administrative, the assistance of members of the veterinary profession should be of considerable value.

The N.V.M.A. has the interests of the poultry industry very much at heart and will spare no efforts, through its members, to ensure the success of the scheme formulated by the Poultry Technical Committee if and when it is brought into being.

N.V.M.A. DIVISIONAL REPORTS

Lancashire Veterinary Association*

MEETINGS AT LIVERPOOL AND MANCHESTER

Mr. G. Mayall's Presidential Address to the Annual Meeting

The Annual General Meeting of the Lancashire Veterinary Association was held at the Department of Veterinary Pathology, 42-44, Bedford Street North, Liverpool, on Wednesday, February 16th, 1938, at 2.30 p.m. The President, Mr. H. Sumner, occupied the chair, and there were also present: Messrs. F. A. Ball, H. G. Hewetson, J. Barker, J. W. Wilson, W. Woods, R. H. Oddy, R. F. Bett, G. Tullis, A. L. Mullen, H. T. Matthews, D. Lloyd-Jones, H. H. Aldred, J. McGhee, A. J. Wright, T. Wilson, J. Cubby, E. Greenway, G. O. Davies, C. F. Shawcross, H. R. Hewetson, P. T. Lindsay, R. J. Thomas, J. W. Barber-Lomax, A. Ratter, A. H. Leyland, R. C. Locke, G. Mayall, R. B. Hornby, J. C. Baird, and Miss P. Stubbs.

Apologies for absence were received from Messrs. G. Holmes, A. B. Kerr, G. H. Locke, R. Hughes, and F. Hopkin.

The minutes of the last Annual General Meeting, having been published in the *Veterinary Record*, were taken as read.

Correspondence.—From Mr. A. B. Kerr tendering his resignation from the Association, which was due to change of locality. It was resolved to accept the resignation with regret and that the Hon. Secretary be instructed to write to Mr. Kerr, conveying the Association's best wishes in his new appointment.

Council Report

A report of the last meeting of the Council was read, which was as follows:—

A Council meeting was held at the Grand Hotel, Aytoun Street, Manchester, on Wednesday, February 2nd, 1938, at 2.30 p.m. The President, Mr. H. Sumner, occupied the Chair.

Present.—Messrs. R. C. Locke, G. O. Davies, H. R. Hewetson, J. Holroyd, A. J. Wright, C. F. Shawcross, T. Wilson, P. T. Lindsay, W. Woods, G. Mayall, F. Hopkin and J. C. Baird.

Apologies.—Apologies for absence were received from Messrs. H. T. Matthews and G. H. Locke.

Correspondence.—(*i*) From the Secretary, Royal Sanitary Institute, inviting the Association to appoint delegates to the Annual Congress to be held at Portmouth, July 11th to 16th, 1938. It was resolved that the Association be represented by those members who will be present.

*Received for publication March 29th, 1938.

(*ii*) From the General Secretary, N.V.M.A., inviting a recommendation from the Association for the award of the Dalrymple-Champneys Prize and enclosing a copy of the rules governing the award. On the proposition of Mr. J. Holroyd, seconded by Mr. P. T. Lindsay, a sub-committee was formed to examine the matter and report to the Council, the sub-committee to consist of the President, Messrs. H. Sumner, W. Woods, P. T. Lindsay and the Secretary.

(*iii*) From the Secretary of the Yorkshire Division asking for support from the Association for Mr. J. W. Procter in the R.C.V.S. Council Election, and giving an assurance that the Yorkshire Division would support a nominee of the Lancashire Division. It was resolved that the Division support Mr. J. W. Procter, that Mr. T. Wilson stand for election as a representative of the Lancashire Division, and that the Yorkshire and North of England Divisions be invited to join the Association in the issue of a joint circular to be sent to members, soliciting support for candidates, the cost being shared.

Nomination of Officers and Council, 1938.—The following nominations were made: President, Mr. G. Mayall; Vice-Presidents, Mr. H. Sumner and Mr. H. T. Matthews; Hon. Secretary, Mr. J. C. Baird; Hon. Treasurer, Mr. R. C. Locke; Hon. Auditors, Mr. A. Dobie and Mr. J. H. White.

Council.—Messrs. G. O. Davies, H. R. Hewetson, G. H. Locke, W. Woods, F. Hopkin, C. F. Shawcross.

Hon. Treasurer's Report.—Certain members were reported under Rule VI (*b*) of the constitution and accordingly ceased to be members of the Association.

R.S.P.C.A. Clinics.—Detailed consideration was given to the proposals of the Organising Committee of the N.V.M.A. regarding R.S.P.C.A. clinics. It was resolved: "That the suggested modifications be circulated to members and be considered at the next general meeting, and that all members of the profession resident within the area of the Association be invited to attend by an insertion in the *Veterinary Record*, along with the notice of meeting."

Any Other Business.—Following upon the receipt of a request by the Hon. Secretary for an honorarium for clerical assistance, it was resolved that a payment of £5 be made.

Hon. Secretary's Report

During the period covered by this report, five general and two Council meetings have been held, as follows:—

Annual General Meeting, February 24th, 1937, at Manchester.—Election of officers and Council. Reports by Hon. Treasurer and Hon. Secretary. Presidential address and discussion of clinical cases. Attendance 28.

Council Meeting at Manchester, March 10th.—Attendance 14.

General Meeting, May 21st, at Liverpool.—A paper read by Mr. N. M. Clayton, M.R.C.V.S., Birkenhead, entitled "Anti-gas Precautions: Points of Interest to the Veterinarian." Attendance 30.

General and Annual Summer Meeting, July 15th, at Chester.—Surgical demonstration by Major F. Chambers, F.R.C.V.S., preceded by luncheon and followed by tea. Attendance 70.

General Meeting, November 3rd, at Liverpool.—A paper by Professor W. C. Miller entitled, "Observations on the employment of artificial insemination in Britain." Attendance 35.

General Meeting, January 19th, 1938, at Manchester University.—A paper by Captain J. R. Barker, M.R.C.V.S., D.V.H., entitled "Milk Fever, Grass Tetany and Allied Conditions in Female Bovines." Attendance 39.

Council Meeting, February 2nd, 1938, at Manchester.—Attendance 13.

Obituary.—The Association suffered a loss through the deaths during the year of Messrs. Warwick Fowle, J. J. Garside and T. McGhee.

Resignations.—Messrs. T. Dobie and A. B. Kerr, the latter being due to change of locality.

Election of New Members.—Messrs. J. Lyon, J. McWilliam, R. N. Clunie, J. F. D. Tutt, E. A. Pearce, J. McGhee, Miss E. H. Patchett, G. Holmes (student), and J. Dobbinson (student). (9).

Representatives of the Council of the N.V.M.A.—Messrs. H. Sumner, R. C. Locke, T. Wilson, G. C. Webster and J. C. Baird.

The present membership of the Association is 135, representing a reduction of one during the year, made up as follows:—

Gains.	New Members ...	...	9
Losses.	Resignations ...	...	2
	Deaths ...	...	3
	Other reasons ...	...	5

The number of meetings held is the same as in the previous year, and attendances have been well maintained.

Hon. Treasurer's Report

The Hon. Treasurer made a statement on the financial position at the end of the year, giving details of receipts and expenditure. The report indicated a sound financial position.

The Hon. Treasurer then asked for authority to pay the customary donation to the Victoria Veterinary Benevolent Fund. It was resolved that the usual sum of £2 2s. be paid.

Nomination for Membership.—Mr. G. O. Davies nominated Prof. J. F. Craig for membership of the Association, and Mr. A. Ratter seconded.

Election of President and Officers for 1938.

The following were elected:—

President.—Mr. G. Mayall.

Vice-Presidents.—Mr. H. Sumner and Mr. H. T. Matthews.

Hon. Treasurer.—Mr. R. C. Locke.

Hon. Secretary.—Mr. J. C. Baird.

Hon. Auditors.—Mr. A. Dobie and Mr. J. H. White.

Council.—Messrs. G. O. Davies, H. R. Hewetson, G. H. Locke, W. Woods, and C. F. Shawcross. Mr. F. Hopkin was elected to fill the vacancy on the Council caused by the election of Mr. H. T. Matthews as Vice-President.

Induction of President

Before vacating the Presidential Chair, Mr. Sumner said that at the conclusion of a year of happiness, it gave him pleasure to propose one who had taken so important a part in the affairs of the Association. Mr. Mayall was a practitioner who had given much time and had made many contributions to the discussions and to veterinary literature, and he wished him as much happiness in the coming year as he himself had had in the past.

Mr. Mayall took the Chair amidst applause and proposed a vote of thanks to the retiring President, saying that he was a worthy son of a worthy father and had pleased the Association. The members showed their appreciation.

PRESIDENTIAL ADDRESS

Mr. Mayall then gave his Presidential Address in the following terms:—

When I consider the list of illustrious names of men who have occupied the post of President of this Association in the past, it is with some diffidence that I will endeavour to follow in their footsteps. Many of them have been stalwarts of the profession in the good old palmy days of veterinary practice. Most of them have been men of wide experience and broad vision. However, "no man having put his hand to the plough and looking back" is fit to be your President—a good soldier never looks behind—and I will do my best to keep the flag of this Association flying.

Those of us who have lived a few years have seen great changes in our surroundings and work, and those of us who have lived and worked for 40 years in practice have seen greater changes still. Gone are the 'bus and tram horses, the cotton mill horses and the gentlemen's carriage horses—all good and lucrative material. Motor cars, lorries and 'buses have arrived and an era of mechanism without much soul has replaced a time of sleek horses and cheery optimistic grooms and ostlers.

The veterinary surgeons of the profuse horse period were very observant men and did their work well, and those of the present day must also be keen observers if they desire to advance. Occasionally the seniors made mistakes, as for instance in a case that happened to myself, when I passed a horse with a false tail beautifully made and fitted to a bare dock, but this was only an incident in life and led to no serious result. But as a whole the men of the horse period carried on with great credit and secured the confidence of their clientèle.

Other changes have occurred. As one who wrote and spoke many times in favour of the old *Board* of Agriculture being given the higher status of the *Ministry* of Agriculture, I have lived to see the day when this has become an accomplished fact. I hope, notwithstanding the present turmoil, that the lasting good of the profession and the sunshine of content will pierce the clouds and emerge on a land metaphorically flowing with milk and honey for the veterinary profession. It will need wise heads and far-seeing vision to bring about this happy result.

In other ways changes of importance have occurred. We now have far more attention given to research than in the past. This is all to the good. The mariners in the sea of medicine and surgery need good pilots to guide them, and the research workers try to become good pilots. They often succeed in conveying us safely into port when we should otherwise be floundering in rough and uncharted seas. All honour to them!

What of the present? The State Veterinary Service is in process of formation, and if animal health is the "be all and end all" for our aim and existence as veterinary surgeons, then good organisation and administration in the matter are certainly necessary. When the millennium of animal health occurs 1,000 years from now, the present great activity in our schools will decline and preventive medicine (so much talked about and hitherto so little practised) will come into its own. Maybe then also no dismay will exist about the decrease in population. We shall have more time on our hands and will find that period increased when we are disturbed by early morning noises which occur when it is too early to go to work and too late to go to sleep again. The productive time will be lengthened and more babies may arrive.

With the decline in the number of horses there has been a great awakening with regard to cattle. The pure milk cry has resounded through the land. The dark, dirty and unhygienic abodes of milk cows are being gradually remodelled on modern lines, and despite an assertion that clean milk can be produced in unsuitable cow-houses, it must be admitted that the health of the animals and the collection and cleanliness of the milk will be improved under modern conditions, and the easement of labour will also be effected. This last is very important because the labour question is a very real difficulty on many farms.

The diseases of cattle have, as yet, never been properly tackled and in many cases have flourished through ignorance and all-round neglect. With universal veterinary supervision, long overdue, a healthier race of bovines should ensue, although it may take many years to bring about the ideal state towards which all health measures should aim and progress.

The worth of a profession depends on its history, annals, literature and perfection of its science and art. I wish more of our members would recognise this. Clinical records help the advancement of our science and art, and it does

seem a matter of regret that the editors of our periodicals should always be begging, and often in vain, for clinical articles. The medical journals are profuse in professional contributions and we ought to waken up and pour out a much larger supply. Editors will always be pleased to receive articles from fellows and members. It is not given to everybody to wield a facile pen, but plain facts plainly given are always acceptable. I make a plea for more case reports and articles. In this connection it has always seemed a pity to me that the veterinary officials of the Ministry of Agriculture are excluded from contributing reports and articles to the veterinary press.

The dog is now given every attention and the care and consideration granted to him is as great as, and in many cases greater than, that given to human beings. Veterinary surgeons can at any rate pat themselves on the back for creating a good atmosphere with regard to the dog, and rescuing him in many cases from ignorance, neglect and contumely. The day of unqualified practice in canine affairs is, I consider, on the decline, and if the scheme of collaboration with the R.S.P.C.A. comes to universal fruition, much further good to canine patients will ensue and much cruelty be avoided.

It is my privilege as your President to have the honour of addressing young men and maidens in my audience here to-day, and I would desire to conclude by saying a few words especially to them with the object of enabling them to do the best work. Keep as fit, mentally and physically, as your heritage from your parents will allow. If you have weak bodies don't overstrain them, but foster and tend your strong points. If you are strong and vigorous take an interest in suitable recreation. Keep up with the sports of the day and play the game in work and recreation. A sportsman or woman can always see two sides of a hedge. Have a hobby and a sense of humour and don't always keep your nose to the grindstone. Some men of the past (and I speak from experience) were always busy making money. When they retired, having no hobbies, they declined mentally and physically and life became a burden to them instead of a time of peace, happy recollections and congenial employment of leisure.

I will close by asking you to remember the words of that great statesman, Disraeli, who affirmed that "the youth of a nation are the trustees of posterity"—a great trust indeed!—and also to recollect those other lines: "The world belongs to those who come the last. They will find hope and strength as we have done."

The President then referred to the honour conferred upon Mr. W. Woods, a member of the Association, in the award of the Steel Memorial Prize. The President congratulated Mr. Woods on behalf of the Association and after applause, Mr. Woods thanked the Association.

Clinical Discussion

The meeting was then thrown open for discussion of clinical cases of interest. Contributions were made as follows:—

Mr. Downham stated that deficiency diseases were very prevalent amongst our poultry flocks to-day, and they indicated the urgent need for veterinary participation in the advice which poultry farmers received upon methods of husbandry and diet. He demonstrated cases of bone diseases in turkeys, his exhibit including two live turkeys which showed a perversion of the process of ossification to such an extent that the pressure of the body weight upon the softened bones of the leg had resulted in complete disuse of the limbs. In one case the legs were displaced laterally on either side of the body, resulting in the bird resting on the right pectoral muscle under the pressure of the body weight. The sternum had been displaced and directed to the left; it was flattened against the coracoid, the distorted ribs and the vertebral processes of that side.

The second bird was typical of late rickets affecting particularly the hip and knee joints. In this case the lower limbs were displaced and directed anteriorly and posteriorly respectively, due to changes in the hip joint. The confusion of the natural minute structure of the epiphyses of the bones at the knee joint had resulted in complete extension of both these articulations, one of which was permanently fixed in an extended position. Mr. Downham said the above condition had probably resulted from a deficiency of vitamin D, and errors in the diet of the birds during the growth period; this would be accentuated by lack of exercise as they had been intensively reared. The birds were hatched in August and the condition was always more prevalent in late hatched birds. There was no doubt that the endocrine glands and particularly the functioning of the parathyroids played a part in this disease. The condition was known to the poultry industry as "slipped tendon," from the fact that owing to the distortion of the epiphyses of the bones the tendons were displaced.

Mr. Downham demonstrated twelve radiographs of the limbs of turkeys suffering from rickets and pointed out that there had evidently been disturbance of the calcium-phosphorus balance in the blood. Two radiographs showing the limbs of apparently normal birds were also exhibited.

The blood calcium figures of these birds were given: in the definitely rickety birds this

figure was always over 10 milligrammes of calcium per 100 c.c. of serum; in two of them it was as high as 12·6 mg. per 100 c.c., whereas the blood calcium figure of a normal bird of approximately the same age was shown to be 9·1 mg. of calcium per 100 c.c.

A radiograph of the complete skeleton of a turkey showing an advanced osteoporosis with loculated areas in the bones and that of a pullet showing the opposite condition, *i.e.*, diffuse osteo-sclerosis, was also demonstrated; other radiographs of the wings and legs of both conditions side by side were presented. The condition was possibly of endocrine origin and no thyroxin was found in the thyroids of the bird suffering from the former disease.

Mr. Downham said he was greatly indebted to Dr. Watson Jones, Orthopaedic Surgeon to the Royal Infirmary, Liverpool, and to Dr. Pyman and his colleagues of the Research Department of Messrs. Boots, of Nottingham, for the radiographs and biochemical examinations of his specimens.

Mr. C. F. Shawcross exhibited an X-ray film of the off-fore phalanges of a seven-years-old grey hunter gelding which had been lame for two months.

After a day's hunting, the horse was pulled out of the loosebox slightly lame, and on examination by the groom, a splinter of wood three-quarters-of-an-inch long by one-eighth-of-an-inch thick was found just above the coronet, and was extracted apparently complete. Hot antiseptic fomentations were applied, followed by antiphlogistine poultices. This treatment was continued for a fortnight and, the lameness being no better, the coronet and pastern were blistered.

A few days after the blister had been applied, he (Mr. Shawcross) was first called in to see the horse. As the parts were still blistered and tender to the touch, a definite opinion could not be given and emollient dressing was prescribed to remove the blister.

On visiting the horse a week later, a swelling the size of half a walnut and slightly fluctuating was found at the part from which the splinter of wood had been extracted. A liquid biniodide blister was applied over the region and the horse was visited again a few days later in the expectation of a local abscess having developed, but he found instead that the swelling had entirely disappeared, but the horse was much lamer. On movement, there was practically no extension of the shoulder joint, and shoulder lameness was diagnosed, and the liquid blister application prescribed.

At a later visit the horse was found to be little, if any, better, and a hard thickening had developed all round the coronary region. Suspecting the possibility of commencing ring-bone, advantage was taken of an X-ray demonstration advertised in the *Veterinary Record*.

The X-ray photograph was taken only that morning and Mr. Shawcross asked members to give their opinions of the film which showed both anterior and lateral views of the phalanges.

Mr. Shawcross explained that before the X-ray photograph was taken, the plantar nerves were cocained, when only about 50 per cent. of the lameness disappeared, which convinced him that he had to deal with a double-seated lameness.

Several members expressed opinions, and in the main agreed that periostitis was present over the surface of the second phalanx.

Mr. Wilson suggested the possibility of a small splinter of wood still remaining deep down in the tissues, acting as an irritant to the periosteum.

Mr. J. Barker presented an osteoma derived from the abdominal cavity of a 17-hands Clydesdale gelding after death. This gelding during life was normal, ate reasonably, and had a clear passage of both fluids and solids. If sent to work for a half or full day it invariably developed symptoms of colic which subsided on its being given a dose of colic medicine. The animal quickly changed ownership at a decreasing price and again came under his (Mr. Barker's) care at its finish.

This monstrous growth, 7½ lb. in weight (dry), was removed from its attachment to the ileum with an axe by the knacker and was sent to him.

On being exhibited at the meeting, it caused quite a variety of opinions as to its nature and origin.

It was difficult to see how the abdominal organs managed to carry on their work with such a spiculated object in close proximity to them.

Mr. A. J. Wright stated he would like to know if any member had had any experience of corn cockle poisoning in young stock. Recently he had had two cases of poisoning amongst young pigs. These pigs, just weaned, started scouring badly and death supervened in quite a number. He suspected the food and in one case pig meal and in the other sharps were found to be the offending food, the analyst's report being that corn cockle was present in both samples.

From literature on poisonous plants, he (Mr. Wright) had found that the corn cockle seeds (little rough ball-like seeds) were difficult to screen from the wheat and were ground up with the wheat. The corn cockle seed was definitely poisonous to young animals, causing acute enteritis and death.

Mr. G. Mayall exhibited a fish hook which he

removed from the cheek of a cat and also a needle and thread from a cat's oesophagus.

Mr. P. T. Lindsay commented upon an X-ray negative of one of his cases. It was of a terrier which had a double dislocation of the hip joints, due to a motor accident. After reduction which presented no special difficulty, the animal made satisfactory recovery.

The meeting was adjourned for tea, after which Mr. R. J. Thomas proposed and Mr. R. F. Bett seconded a vote of thanks to those who had taken part in the discussion, and in the absence of further business the meeting was declared closed.

J. C. Baird, *Hon. Secretary.*

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MEETING AT MANCHESTER

A general meeting of the Association was held in the Grand Hotel, Aytoun Street, Manchester, on Wednesday, March 16th, 1938, at 2.30 p.m.

The President, Mr. G. Mayall, occupied the Chair and there were also present: Messrs. H. G. Hewetson, H. R. Hewetson, C. F. Shawcross, A. J. Wright, T. Wilson, H. D. Heggarty, J. Holroyd, R. S. White, F. Hopkin, W. Woods, E. A. Pearce, E. W. Prescott, R. F. Bett, R. H. Oddy, J. H. Wright, A. H. Leyland, J. W. Procter, R. C. Locke, J. C. Baird and Miss P. Stubbs. Mrs. K. G. R. Kelly and Mr. N. G. Michie were present at visitors.

Apologies for absence were received from Messrs. T. G. Millington, H. T. Matthews, D. Lloyd-Jones, A. B. Mattinson, G. O. Davies, P. T. Lindsay, J. H. White, G. H. Locke and R. J. Thomas.

Correspondence.—Letters were read from the following:—

(1) Mr. W. Nightingale, resigning from membership of the Association, owing to change of locality. It was resolved to accept with regret.

(2) The Chairman and Secretary of the British National Committee of the Thirteenth International Veterinary Congress, indicating the advantages and inviting membership of the Congress.

(3) The Chairman and Secretary of the British National Committee of the Thirteenth International Veterinary Congress, appealing for a donation towards a fund to defray expenses of delegates. It was resolved that no action be taken.

Election of New Members.—Mrs. K. G. R. Kelly, M.R.C.V.S., and Professor J. F. Craig, F.R.C.V.S., were unanimously elected members of the Association and Mr. R. B. Hornby was elected a student member.

R.S.P.C.A. Clinics

Consideration was given to the proposals of the Organising Committee of the N.V.M.A. regarding R.S.P.C.A. clinics. Certain modifications, which were as follows, were agreed to, and it was resolved that they be forwarded to the N.V.M.A.

Centralised Scheme

2. Delete the word "practising" and substitute the word "resident."

4 (1). After the word "owners" add "the final decision to rest with the attending veterinary surgeon."

4 (2). After "N.B.," delete to end of paragraph, and substitute "Equipment, in addition to furniture, chairs, tables, etc., includes drugs and instruments."

4 (3). Delete "The veterinary surgeons concerned . . . lock and key."
Delete from the word "handed" to the end of the paragraph and substitute "placed in a box provided and go towards the funds of the R.S.P.C.A."

4 (4). Delete "All." Delete "should" and substitute "may." After the word "fee," add "which should be nominal."

4 (5). Delete paragraph and substitute "Persons in a position to pay should not be allowed to make use of the clinic and should be referred to a veterinary surgeon."

Decentralised Scheme

Opening Paragraph.—Delete the words "something or" and "according to his means." After the word "nothing" add "but a box provided for funds to go to the Society. Forms of services rendered should be issued to the veterinary surgeon and signed by him and the owner or person in charge of the animal."

Paragraph 2.—Continue existing paragraph as follows, after "gratuitously": "Veterinary surgeons should be recompensed for their costs of dressings, medicines and overhead charges at a scale agreed between them and the local committee of the R.S.P.C.A. and paid by the R.S.P.C.A."

In the absence of further business the meeting was declared closed.

J. C. Baird, *Hon. Secretary.*

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Veterinary Medical Association of Ireland*

ANNUAL MEETING AT DUBLIN

The annual general meeting of the Veterinary Medical Association of Ireland was held in the Veterinary College of Ireland, Ballsbridge, Dublin, on Monday, January 31st, 1938, at 7 p.m.

The following members were present: Professors T. G. Browne, J. A. Nicholson, A. F. O'Dea, J. J. O'Connor, W. Kearney, Messrs. J. F. Timoney, E. W. Little, J. J. Lyons, E. V. Kelly, J. MacCann, L. M. Magee, J. E. Fitzgerald, J. M. Crowe, J. J. Condon, A. A. Donnelly, F. O'Leary, P. M. McManus, J. M. Morris,

*Received for publication April 5th, 1938.

P. J. Nolan, J. E. Kenny, J. McAteer, W. Joyce, M. J. Byrne, J. D. Whitty, J. D. O'Connor, P. A. McGeady, J. P. Nowlan, Miss H. Bisset, Miss B. Taylor and J. M. Murphy, Hon. Secretary.

Apologies for non-attendance were received from Messrs. P. F. Dolan, Sean O'Donovan, D. Reeves and P. J. Gaffney.

Demonstrations

(1) *Veterinary Film.*—The proceedings commenced with the demonstration, by Professor T. G. Browne, of a cinema film illustrating the "Bohler" method of treating fractures in small animals by Cellona.

This film was very instructive and interesting and showed the advantages to be gained by this method of dealing with fractures.

At the conclusion of this demonstration a hearty vote of thanks to Messrs. Smith and Nephew, of Hull, who made and showed the film, was proposed by Mr. L. M. Magee, seconded by Professor O'Connor and passed unanimously.

(2) *Demonstration of a Monstrosity.*—Mr. L. M. Magee, M.R.C.V.S., Dunboyne, exhibited a monstrosity (calf) which he had delivered from a cow in the morning. The calf was on its back in the mother and required a good deal of manipulation before it was delivered. When delivered it was alive and Mr. Magee had to slaughter it. The floor of the abdomen had never closed and most of the contents of the abdominal cavity were outside the body, having passed through the opening in the abdominal wall. It had only one foreleg and not even a vestige of the other foreleg could be found.

A hearty vote of thanks to Mr. Magee for having brought forward this specimen was proposed by Professor O'Connor, seconded by Professor Kearney and passed unanimously.

Messrs. A. A. Donnelly, Drogheda and J. J. Condon, Tipperary, also spoke and said that they wished to be associated with the vote of thanks.

The minutes of the November general meeting were read, confirmed and signed.

Correspondence.—Correspondence was read from Mr. J. Lynch, M.R.C.V.S., New Ross, showing that the County Wexford Board of Health was prepared to raise the salaries of its veterinary inspectors to £150 per annum. Present salaries of three men £50, one man £100 per annum. (Note: This increase apparently results from increased duties under the Milk and Dairies Act, 1935.)

A discussion took place on the question of increased remuneration for part-time veterinary inspectors for the extra work involved in the carrying out of the Milk and Dairies Act, 1935.

Mr. MacCann stated that the Department of Local Government had not yet sanctioned any increased remuneration for this work.

Mr. Magee stated that the Department are waiting to get in particulars of the work carried out by each inspector.

Mr. Condon said that each county should organise as Wexford did and go to their local authority.

It was decided that it was probably premature to make representations to the Department of Local Government and Public Health on the matter at present.

Honorary Secretary's Report for 1937.—The Hon. Secretary's report for the year 1937 having been circulated, it was proposed by Professor O'Connor, seconded by Mr. MacCann and passed unanimously, that the report be adopted.

Honorary Treasurer's Report for 1937.—It was proposed by Professor Browne, seconded by Professor O'Connor and passed unanimously, that the Hon. Treasurer's report be adopted.

Report of Council.—The Hon. Secretary read a short report of the two council meetings which had been held since the November General Meeting.

Election of Office Bearers for 1938

Messrs. J. P. Nowlan, J. D. O'Connor and P. A. McGeady, were appointed scrutineers.

The following officers were elected for 1938:—

President.—Professor A. F. O'Dea.

Vice-Presidents.—J. J. Condon, E. W. Little, B.L.

Hon. Treasurer.—F. O'Leary.

Hon. Secretary.—J. M. Murphy.

Council:—

Elected 1938.	Elected 1937.
Messrs. J. F. Timoney.	Professor W. Kearney.
J. D. Whitty.	Messrs. M. J. MacClancy
E. V. Kelly.	P. E. Mullaney.
J. A. Flynn.	J. E. Kenny.
J. J. O'Brien.	

R. R. Pierse (to hold office for one year, *in lieu* of Mr. F. O'Leary, elected Hon. Treasurer).

Induction of President

The outgoing President, Professor T. G. Browne, stated that his period of office as President had now terminated and in addition to that, his period of office in another capacity and one which perhaps meant more to him, that of Honorary Treasurer of the Association. This position, which he had held for almost 20 years, had terminated for him for reasons over which he had no control. He explained to the members the circumstances in which he had relinquished the office of Honorary Treasurer and expressed his regret at having to do so.

He then stated he had much pleasure in calling on Professor O'Dea, who had been

unanimously elected President for 1938, to take the Chair.

Professor O'Dea then took the Presidential Chair amidst much acclamation. He cordially thanked the members for the honour conferred on him.

Presidential Address

Professor O'Dea then delivered the following Presidential Address:—

I am deeply grateful for the honour you have conferred on me in electing me to the Presidential Chair and I much appreciate it. I feel that I have done very little to merit this honour and in seeking for a reason I can only conclude that it is in virtue of the fact that I have shared the Vice-Presidency for the past twelve years.

It has been intimated to me that it is a traditional custom for a new President to present an address. The tradition has not invariably been observed, possibly for the reason that the selection of a subject is not always easy. The usual form appears to deal with some aspect of the Association's scientific or political activity, perhaps chiefly the latter. The outlining of a programme for the future is not always practicable, while a review of the deliberations of previous years would be better dealt with by a Past-President. I propose to detain you only a very short time with a few words on what I consider to be an important aspect of the Association's functions, namely, the educational one.

In passing, I might mention that it is, in my opinion, good policy to elect a new President every year because in so doing the personnel of the Council is extended by two members, thus enabling varying interests to be represented and so evading any change of bias or conservatism. Movement onwards leaves room for ambitious youth to fill the gaps, and progress should be encouraged within the profession. Without it we shall not carve out that niche in the edifice of the nation to which our scientific training and capabilities entitle us; there is even a danger that we may not retain that position on the ladder of progress which we now occupy. A man is known by his deeds, an Association by the deeds of its individual members. This Association is composed not only of individuals but of groups of members which form a composite whole representing the majority of the profession in Eire. The duties and functions of these groups are of a varied though allied character performed by persons who have gone through a similar training and have obtained identical qualifications—membership of the Royal College of Veterinary Surgeons. Such qualifications confer certain rights and privileges and entail certain duties and responsibilities. As a newly-fledged graduate I, and I am sure many others here present, rejoiced in the rights and privileges of which I was jealous but considered that the obligations demanded only a disposition of compliance which was fulfilled by the exercise of reasonable care in treatment of a patient or client. A short time in practice teaches the young graduate the fallacy of such an attitude. The more he sees the more he learns, the more he learns the more he realises the depth of his ignorance and at this stage two courses are open, one to remain in that passive state and eke out an existence by giving the minimum of service for which he can expect but a minimum of respect and the minimum of recompense. Such a man is at sea when he meets with an abnormal condition that has not been described in the notes or text-books of some years earlier; he is unable to advise on the most effective prophylactic measures against disease existing or imminent; to discuss diet, genetics or many other phases of animal husbandry that crop up from time to time. Despite acquired experience he will often fail in the treatment of injury or sporadic disease because he has not kept pace with modern methods and modern therapeutics. The other course open to a graduate at this stage of realisation is to seek that knowledge of which he is in need and the keen man with a sense of duty will seek it from every available source. The readiest source, of course, is veterinary literature, especially the *Veterinary Record* and the *Veterinary Journal*. Time might also be well spent on a perusal of one of the weekly agricultural journals. Useful information may even be gained from the advertisements of various drug and instrument manufacturers. Manufacturers of repute do not make unduly exaggerated claims for their products nowadays.

A most effective way of keeping in touch with progress is by social intercourse among one's colleagues. At the various meetings of the Association one can always find somebody who has had a similar experience of one condition or another and can seek information from a member of the College staff or the Research Institute, at Thorndale, which may elucidate a problem. At such meetings there is always an address on a professional subject followed by a discussion from which often more information can be gleaned than from the actual address. Here I should like to add a word of warning. The practitioner should not absent himself because a paper is being read on meat inspection, milk production or some scientific subject of academic interest and salve his conscience with the thought that such subjects do not come within his province. They are liable at any time to come within his province. It is incumbent on the practitioner to be capable of giving the most up-to-date advice on such matters as

clean milk production. He will often find also that the veterinary meat examiner can give valuable information on the pathology, cause and clinical evidence of disease. The whole-time officer should attend addresses and demonstrations of a practical nature. He, too, is primarily a veterinary surgeon and he should not forget that fact. If for no other reason he should attend to pay tribute to the busy practitioner who, despite long days of hard work, has surrendered many hours of rest for the purpose of adding to the sum of knowledge of his colleagues. Competent practitioners form the backbone of the profession. No other group renders day in and day out such service to the nation and we must all recognise the fact that our *raison d'être* as a profession depends on our value as a unit in the economy of the State.

Duty to ourselves requires that we shall be competent and capable; duty to our profession demands that we shall endeavour to make some return for the privileges which membership confers, and as citizens we have a no less binding duty to the State and to the public. We are capable of giving valuable service to the nation within our various spheres. That we are not recognised as indispensable is a fact for which we may not be altogether blameless. There are instances where the feeling of the public towards the veterinary surgeon appears to be one of suspicion. There is a want of confidence and trust and this is most apparent among that class with whom our interests mainly lie and with whom we should most cordially co-operate, namely, the farming community. Let us ask ourselves why this attitude of mistrust should exist in these, happily, few instances. Is it perhaps merely because a member does not show due sympathy with and appreciation of his client's difficulties; is it because either through carelessness or ignorance he fails to give necessary advice, or gives advice that is unpractical; or does it arise on even more serious grounds? Some faults may be retrieved and forgotten but others condemn a man irrevocably and not only is the guilty party blamed but a slur is cast on the whole profession. We condemn any shortcomings of our colleagues more heartily than the public do, but we must go a step further. We must try to prevent them and, remembering that the man most likely to bring discredit is he whose equipment is poorest in pursuit of an honourable livelihood, it behoves us, whenever the occasion presents itself, to instil into the minds of our colleagues a sense of their responsibilities and a proper *esprit de corps*. Individual members may accomplish much by mentioning some new method of treatment or some fresh investigation of disease that he has read or heard discussed at a meeting and he may in that way induce a colleague to subscribe to a journal or to join the Association and attend the quarterly reunions where subjects of practical veterinary science are debated and where the non-member will meet men who represent the true spirit of the profession. The Association with a view to attracting members will, we trust, continue to do its part by providing interesting educational material of a practical nature.

Our profession is still comparatively young, but its foundations are solid. It is our duty to raise it to that position of eminence which it deserves.

Mr. J. D. Whitty welcomed the new President and then proposed a vote of thanks to the outgoing President, Professor T. G. Browne. He said that Professor Browne's paper and demonstration at the May meeting had been a great help to the veterinary profession who had thereby derived much valuable information.

Mr. L. M. Magee, in seconding the vote of thanks to Professor Browne, also congratulated Professor O'Dea on being elected President. Mr. Magee spoke in the highest terms of the Presidential Address, the paper and the demonstration given by Professor Browne during his year of office and stated that he had mentally thanked him on many an occasion for his previous demonstration on epidural anaesthesia. He warmly seconded the vote of thanks proposed by Mr. Whitty and mentioned that at the next May meeting he would like to see a demonstration of intravenous injections in horses and cattle.

Professor O'Connor, in speaking to the vote of thanks to the outgoing President, first congratulated Professor O'Dea on being elected and on his Presidential Address, which contained much good advice: it was a very appropriate address. He then spoke of the great work done by the outgoing President, Professor Browne, during the year. He stated that he took great pride in the fact that Professor Browne was a past-pupil of his in addition to being a colleague.

Mr. A. A. Donnelly then rose to welcome the new President. In associating himself with the vote of thanks to the outgoing President, Mr. Donnelly said that two big events took place during his year of office. The first was that a very successful joint meeting took place between the members of the North of Ireland Veterinary Medical Association and our own members. The second was the demonstration on the dishorning of cattle by means of a local anaesthetic. This demonstration, said Mr. Donnelly, would probably result in having the Animals Anaesthetic Act altered.

Mr. J. J. Condon also sincerely thanked Professor Browne for his wonderful work during the year and in welcoming Professor O'Dea.

Mr. Condon said that the outstanding quality which he admired in him was his sincerity.

Professor Browne, in reply, stated that he sincerely wished to thank the members for all their kind remarks: the writing of the paper and the giving of the demonstration had been only a pleasure to him.

Professor O'Connor proposed a vote of thanks to the other outgoing officers of the Association. Mr. Donnelly seconded the vote of thanks, which was passed unanimously.

Votes of condolence with Mr. P. F. Dolan, Chief Veterinary Inspector, Dublin Corporation, on the death of his brother, and with Mr. Patrick Crowley, Department of Agriculture, on the death of his father, were passed—all members standing.

New Members.—The following members, having been duly proposed by Mr. F. O'Leary and seconded by Mr. M. J. Byrne, were unanimously declared elected—Mr. P. Hayes, M.R.C.V.S., and Mr. J. J. O'Hagan, M.R.C.V.S., both of the Dublin Corporation.

J. M. Murphy, *Hon. Secretary.*

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

May 5th.—Last day for nomination for election to R.C.V.S. Council.

May 5th.—Meeting of the Central Division, N.V.M.A., at 36, Gordon Square, W.C.1, 6.30 p.m.

May 9th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

May 16th.—R.C.V.S. Examination in Animal Management begins.

May 19th.—R.C.V.S. Annual Report and voting papers issued.

May 26th.—Last day for return of voting papers, R.C.V.S. Council election.

June 2nd.—R.C.V.S. Annual General Meeting. Election of Council.

June 9th & 10th.—D.V.S.M. written examination.

June 13th.—D.V.S.M. oral examinations begin.

June 22nd & 23rd.—R.C.V.S. Committee Meetings.

June 24th.—R.C.V.S. Committee and Council Meetings.

June 30th & July 1st.—R.C.V.S. written examinations.

Aug. 21st-25th.—Thirteenth International Veterinary Congress, Zürich.

Aug. 26th-27th.—Thirteenth International Veterinary Congress, Interlaken.

Sept. 5th-9th.—Annual Congress, N.V.M.A., at Glasgow.

N.V.M.A. RESOLUTIONS *RE* DISEASES OF POULTRY

Comment upon the recently published report of the Poultry Technical Committee for Great Britain is made in the editorial columns of this issue, and we give below the text of the resolutions discussed and adopted at the last meeting of Council, N.V.M.A., following the recommendations of the Association's Advisory Committee on Poultry Diseases, which has considered the report in detail.

The resolutions are as follows:—

To be sent to the Minister of Agriculture and Fisheries and the Secretary of State for Scotland

(1) "The N.V.M.A. has fully and carefully studied the 'Report of the Poultry Technical Committee for Great Britain (1938).' Upon the assumption that a Poultry (Stock Improvement) Commission will be established with power to 'build up an inspectorial organisation by areas,' the N.V.M.A. is very strongly of opinion (1) that the inspectorial organisation of each area should be in the charge of a full-time veterinary officer for the inspection of poultry in health and disease, (2) that each area veterinary officer should have under his direction (*a*) a panel of veterinary practitioners (part-time), and (*b*) a staff of full-time lay poultry inspectors, 'well qualified in poultry husbandry' (*e.g.*, of the standard of county poultry instructors).

"The Association desires also to draw the attention of the Ministers concerned to the desirability of full use being made of the existing laboratories including privately-owned laboratories under veterinary supervision which specialise in poultry disease work in connection with *post-mortem* examinations and the various biological and other tests appertaining to the control of poultry disease.

"The Association hopes that it will be invited to nominate one or more of its members to serve on the proposed Poultry (Stock Improvement) Commission and on each of the proposed Advisory Councils (for England and Wales, and for Scotland).

"The Association would greatly appreciate the opportunity of discussing its views on these subjects with the respective Ministers or their representatives."

To be sent to the R.C.V.S. and Veterinary Colleges

(2) "The N.V.M.A. is concerned regarding the present position of education of the veterinary profession in poultry husbandry and disease control. The Poultry Technical Committee for Great Britain in its recently published report recommends the employment of members of the veterinary profession especially practising veterinary surgeons with specialised knowledge of poultry diseases, but states that the number of such men at present is extremely limited. The N.V.M.A. would urge immediate action by the R.C.V.S. and veterinary colleges to ensure that veterinary practitioners and recently qualified veterinary surgeons are given the opportunity of acquiring the necessary training in poultry husbandry and disease control to enable them to carry out the duties visualised by the Poultry Technical Committee. For practitioners, short

courses, comprehensive in character and for recently qualified veterinary surgeons, special post-graduate courses of at least three months duration, are suggested. It is further suggested that in arranging such short and post-graduate courses consideration should be given to the use of institutions at which instruction in poultry husbandry, etc., is carried out at present.

"The Association hopes that, in view of the vital importance in the future to the poultry industry of a thoroughly efficient veterinary service, still further attention will be devoted to the training of veterinary students in poultry subjects."

For action by the N.V.M.A.

(3) "A circular letter should be sent by the N.V.M.A. to all Divisions of the Association drawing attention to the report of the Poultry Technical Committee and the recommendation that a panel of practising veterinary surgeons is to be used. Divisions should be advised to take steps to ensure that short courses in poultry husbandry and disease control are made available to veterinary practitioners and others at centres in the district, *e.g.*, at veterinary colleges, institutions and laboratories, where poultry work is normally carried out, etc. The committee is of opinion that the matter is urgent and that the institution of courses should not be delayed.

"With regard to the Handbook on Poultry Diseases published by the committee last year, it is recommended to the Council that veterinary students be allowed to purchase the Handbook at a cost of 2s. 6d. and that a notice to this effect be sent to veterinary colleges."

It is proposed to add to the booklet this year a section dealing with spirochaetosis and tick infections in poultry.

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PERSONAL

Changes at the Ministry of Agriculture

On the vacation of the post of Second Secretary to the Ministry of Agriculture by Mr. A. W. Street (who is to become Deputy Under-Secretary for Air), Mr. D. E. Vandepeer, now Principal Assistant Secretary to the Ministry, has been appointed as his successor. Mr. Vandepeer has served as Private Secretary to five Ministers of Agriculture—Mr. Guinness (now Lord Moyne), Mr. Noel Buxton (now Lord Noel-Buxton), Dr. Addison (now Lord Addison), Sir John Gilmour, and Mr. Walter Elliot. In 1934 he was appointed Assistant Secretary in the Markets Division and was in charge of branches of the Ministry dealing with trade relations, the regulation of imports, the sugar beet, wheat, cattle and milk subsidies, including the Milk in Schools Scheme. When Sir Henry French became head of the Food (Defence Plans) Department, and Mr. Street was made Second Secretary, Mr. Vandepeer was appointed Principal Assistant Secretary and was closely associated with the work involved in the Livestock Industry Bill.

In July, 1937, when the proposals in the Agriculture Act for a new State Veterinary Service had been approved in principle by Parliament, Mr. Vandepeer was appointed Administrative Head of the Diseases of Animals Division of the Ministry (now the Animal Health Division). It was, of course, in this latter capacity that Mr. Vandepeer undertook important negotiations with the Association's Consultative Committee. Mr. C. Nathan becomes Head of the Animal Health Division as from April 27th, and Mr. V. E. Wilkins, O.B.E., is appointed Assistant Secretary (Acting) in succession to Mr. Nathan.

Animal Health Division Inspectorate

The following promotions to take effect as from June 2nd, 1938, have been approved:—

Major E. S. James, O.B.E., B.V.Sc., M.R.C.V.S., D.V.S.M., to be promoted to Superintending Veterinary Inspector.

Mr. G. Edmondson, M.R.C.V.S., to be promoted to Divisional Veterinary Inspector.

The following changes of station and reallocation of duties have been approved:—

Major E. S. James to take up his station at Norwich on May 9th, in charge of Area No. 5.

Mr. G. Edmondson to take up his station at Hertford on May 2nd, in charge of Division No. 32 (Herts., Middlesex and London), vice Major James.

Mr. H. T. Matthews, B.V.Sc., F.R.C.V.S., D.V.H., who is at present at Preston in charge of Area No. 3, to be transferred to Head Office on May 2nd.

Captain T. G. Millington, M.R.C.V.S., D.V.H., who is at present in charge of Area No. 14, to be transferred to Preston on April 27th, in supervisory charge of Area No. 3, vice Mr. H. T. Matthews.

Mr. H. M. Salusbury, M.R.C.V.S., D.V.H., to remain stationed at Ruthin and to take charge of Area No. 14, as from April 27th, vice Captain Millington.

Captain J. A. McCutcheon, M.R.C.V.S., at present stationed at Canterbury, will be transferred to Ruthin to take charge of Division 48 (Denbigh).

Mr. H. G. Silcock, B.Sc., M.R.C.V.S., to be transferred from Dorchester to Canterbury on May 2nd as Assistant in Division 34 (Kent), vice Captain McCutcheon.

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Marriages.—Hughes—Jones. On April 20th, 1938, at Mozerah Presbyterian Church, near Abergavenny, L. E. Hughes, School of Agriculture, University College of North Wales, Bangor, to Gwladys Elizabeth Jones, Bryn Llewelyn, Cilmery, Builth Wells.

Taylor—Munro. At the Queensgate Hotel, Inverness, on April 14th, 1938, by the Rev. James Anderson (uncle of the bride), John Alexander Taylor, Lecturer in Anatomy at the Royal (Dick) Veterinary College, Edinburgh, to Grace Janetta, only daughter of Mr. M. M. Munro, and the late Mrs. Munro, 36, Lochrin Buildings, Edinburgh.

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Will.—Howard, Mr. Percy Sturton, of Wanstead, E., veterinary surgeon (net personalty, £21,266), £24,260.

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Emeritus Professor Sir Frederick Hobday, C.M.G., F.R.C.V.S., late Principal and Dean of the Royal Veterinary College, was amongst the assembly at the annual commemoration service held in St. Paul's Cathedral on the morning of Saturday last—St. George's Day—by the Knights Grand Cross, Knights Commanders and Companions of the Order of Saint Michael and Saint George. The ceremony was attended by His Majesty the King, Her Majesty Queen Mary and Their Royal Highnesses the Duke and Duchess of Kent.

R.C.V.S. OBITUARY

Jones, John Rhydwen, Acacia House, Llanrwst, Denbigh. Graduated N. Edinburgh, July 14th, 1882. Died April 23rd, 1938, after many months' illness.

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ARMY VETERINARY SERVICE

Movements of Officers

Captain D. F. G. Smith sailed from Egypt for India, on January 28th, to complete his tour of foreign service.

Major G. F. Steevenson, who has been on leave ex-India, assumed duty as Officer Commanding, Station Veterinary Hospital, Aldershot, on the 10th instant.

The following temporarily re-employed retired officers have ceased to do duty, *viz.*, Major F. R. Roche-Kelly with effect from March 1st, and Major A. S. Lawrie with effect from April 1st.

The following officers are at present in this country on leave ex-India: Majors H. J. Hughes, M.B.E., J. J. Mills, G. F. Watkins, L. R. Swifte, L. H. B. Poer, M.C., W. L. Sinton, and F. W. Goodall; Captains P. A. Reeves, A. D. Seton and E. H. Lewis-Bowen.

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LEGAL NOTES

Horse's "Unnecessary Suffering."—The Oxford magistrates found proved a charge of causing unnecessary suffering to a horse in a recent case in which the defendants were Gladys Doering, of Port Meadow, the proprietress of a riding school, and William H. Boscawen Somerset, of 17, Rawlinson Road, Oxford, a graduate and a senior assistant at the Bodleian Library.

Mr. Gordon Jones prosecuted on behalf of the R.S.P.C.A., Somerset was represented by Mr. H. Murphy, and Miss Doering conducted her own case. Both defendants pleaded "Not guilty." Presenting the prosecution's case, Mr. Jones said the defendants were part owners of the horse in question. "Miss Doering is a proprietress of a riding school and as such I take her to be familiar with horses and their needs," he went on. "Mr. Somerset is a member of Oxford University and is in a different position so far as his knowledge goes. I am told he has his own horse, and I believe is an old hunting man, so he has a superficial knowledge of horses.

"On or about February 25th the horse was seen turned out on Port Meadow, and the condition of it was such that the attention of Major Taylor, veterinary surgeon of Oxford, was called to it. He advised its removal from Port Meadow, but Miss Doering was hostile to Major Taylor and told him to leave the horse alone. Miss Doering took the horse away and all trace of it was lost for some time. On March 20th the horse was seen again turned out in a meadow at Godstow and its condition was much worse. It was extremely thin and very weak and could only just walk about. On the next day the horse was seen again lying on the ground and a man went over to try and assist it to rise. The man spent two-and-a-half hours inducing it to rise and eventually succeeded. It staggered a few yards, only to collapse again, and it had to be left where it fell.

"The next day the horse was in the same position and on examination was found to be *in extremis* and it actually died whilst the examination was being made by the veterinary surgeon. It was so extremely thin that it was a mere bag of bones. It could not stand or eat and was infested with red worms."

Inspector F. S. Burtenshaw, of the R.S.P.C.A., gave evidence as to the emaciated condition of the animal, saying that he was later present when an examination was made by two veterinary surgeons he had summoned. He inspected the ground, and for a distance of 23 feet by twelve feet round the animal the grass and earth had been torn up by it in its struggles.

Witness eventually saw Miss Doering, and she said: "I am part owner of the horse for breeding purposes." He told her that he had called in two veterinary surgeons and that in their opinion the animal had been neglected. He asked her if she had done anything about treating the horse, and she said: "Of course I have not. Your surgeons are just cat and dog vets. There was nothing wrong with it until the day before it died. It fell down in a ditch and hurt its back, and I have been rubbing it with embrocation."

Mr. E. J. Heather, a veterinary surgeon, said that he was one of two veterinary surgeons called to examine the animal. It was lying on the ground and it appeared to be very near to death. Its respiration was shallow and very slow, while the pulse was almost imperceptible. It was very emaciated and there were signs of severe contusion of the eye. The primary cause of death was red worm infestation resulting in peritonitis.

Witness conducted a *post-mortem* examination with Major Taylor, the other veterinary surgeon present when the horse died. The knees of the animal showed severe bruising, and the muscles had practically vanished. It must have been very obvious to anyone with a knowledge of horses that it was in a very serious condition. It had been in a dying condition for at least 14 days, and the only humane thing to do would have been to destroy it.

Mr. J. R. V. Johnson, photographer, of Farmoor, Oxford, produced photographs of the dead animal.

Major F. J. Taylor, veterinary surgeon, agreed with Mr. Heather's evidence. In his opinion the horse had been suffering from these worms for probably six months. If a surgeon had seen the horse about Christmas a treatment could have been adopted to save the animal. It should have been taken into shelter and should have had a great deal more care taken of it. In his opinion it was a case of very serious neglect.

Mr. Murphy, addressing the magistrates on behalf of Somerset (who had given evidence) said: "He did not hear anything about it until the horse was dead, otherwise he would have had the opportunity of saying the horse must be destroyed to save further suffering. He was not told during his illness that anything was wrong with the horse, otherwise he would have got a veterinary surgeon in."

Miss Doering, in a statement to the magistrates, said that she regularly fed the animal. She asked the woman in whose care the horse was to notify her if there were any signs of red worms. The woman told her there were red worms and on March 21st she (defendant) went to the veterinary surgeon and told him there were definite signs of the worms. She was told the horse had fallen into a ditch, but her impression was that it had rolled there during an attack of colic. "I did all that a competent nurse could to make the horse comfortable. In this case I was in a difficult position. I did not know whether Mr. Somerset had started for his holiday or not, and I had no right to give instructions to have it killed," said defendant. "If it could have been pulled through, the stud value of the horse was £1,000 a year for twelve

years," defendant declared. "I would not let a horse suffer badly, but this horse was not suffering. When I saw it last, it was peacefully asleep. To order its destruction was really not in my power."

After a short retirement the magistrates announced that they found both cases proved.

The magistrates' clerk said there was a previous conviction for cruelty to an animal in 1935 against Miss Doering, when she was fined £3 and two guineas costs.

The Chairman (Mr. A. E. Eagleston) said the case against Somerset would be dismissed under the Probation of Offenders Act on payment of two guineas costs. The other defendant would be fined £5 and three guineas costs.

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ANIMAL HEALTH RESEARCH SCHOLARSHIPS AND STUDENTSHIPS

Acting in consultation with the Agricultural Research Council, the Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland invite applications for the following post-graduate Agricultural Research Scholarships and Studentships for Research in Animal Health, tenable as from October 1st, 1938, for a period not exceeding three years:—

(*i*) Not more than four Agricultural Research Scholarships, each of the value of £200 per annum, to which will be added, if necessary, a sum which will not normally exceed £50 per annum for fees and expenses.

(*ii*) Not more than three Studentships for Research in Animal Health, each of an *inclusive* value not exceeding £300 per annum. Instead of one of these Research Studentships, a veterinary scholarship of the value of £200 per annum, with allowances not exceeding £50 per annum, and tenable for not more than four years, may be awarded to enable a graduate with Honours in Science to obtain a veterinary professional qualification with a view to undertaking research in animal health.

Applications must be received not later than May 31st, 1938. Nomination forms and further particulars may be obtained from the Secretary, Ministry of Agriculture and Fisheries, 10, Whitehall Place, S.W.1, or from the Secretary, Department of Agriculture for Scotland, 29, St. Andrew Square, Edinburgh, 2, according to the country in which the candidate resides.

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Erratum.—We regret that the notification given in our issue of last week (Advertisement page x) of the meeting of the Sussex Division, N.V.M.A., held at Brighton on Friday last, was erroneously headed "South-Eastern Division, N.V.M.A."

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ZOO ATTENDANT'S DEATH FROM PSITTACOSIS

In our issue of April 9th we recorded that an outbreak of sickness in the Parrot House of the London Zoo was suspected to have been one of psittacosis and that an attendant who had been in contact with the birds had died in hospital "of a fever resembling psittacosis." At the adjourned inquest, on Wednesday of last week, the jury found that Sprunt, the attendant, died from parrot disease during the course of his employment. They added that they were satisfied that every precaution had been taken by the authorities of the Zoo.

It was stated that blood tests from four keepers who fell ill about the same time as Sprunt showed no signs of parrot disease.

Dr. A. G. Troup, medical superintendent at the Willesden Municipal Hospital, said that the cause of Sprunt's death was traced by Professor Bedson, of the London Hospital, by injections into mice, after it had been thought that Sprunt was suffering from enteric fever. Professor Bedson made injections from some of the organs into mice, which developed signs of psittacosis infection.

Mr. D. S. Smith, curator of birds and mammals at Regent's Park, after describing elaborate precautions against infection spreading among the birds, said that the parrot house would remain closed until the authorities were satisfied that there was not the slightest danger in readmitting the public.

He added that the outbreak, the first recorded in the over 100 years' history of the Zoological Society, originated in a consignment of parrots brought from South America and the West Indies by Lord Moyne. As was customary the birds remained in the sanatorium for a week or two, "to see if they were all right." All those of the consignment kept at the Zoo which had not died had been destroyed as a precaution. These parrots had never been on exhibition to the public.

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NATIONAL INSTITUTE FOR RESEARCH IN DAIRYING

The National Institute for Research in Dairying at Reading has issued an appeal for £36,000 for extending its laboratories and equipment. Of this sum £19,000 is required immediately and a further £19,000 in the course of the next five or six years. The work of the N.I.R.D. covers the breeding, feeding and management of the dairy herd, the study of methods and apparatus for the production, handling, processing and distribution of milk and for the making, storage and distribution, of butter, cheese and other milk products. The appeal states that the work of the Institute is being severely handicapped by the limitations of the present accommodation. The staff is grossly overcrowded and certain types of research work are made impossible by the structural defects of the present buildings.

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MILK INDUSTRY BILL

It is expected that the Bill to give effect to the Government's proposals for the milk industry will be introduced in the House of Commons before Whitsuntide. The concern expressed by producer-retailers about the possible effect on their businesses of provisions for improving milk distribution has led to reports of a decision by the Government to postpone the Bill indefinitely, but it is understood that there is no such intention.

The legislation under which the milk industry is at present assisted by the Exchequer will come to an end on September 30th, and it will be necessary to have the new Bill passed before then. Since the Government's proposals for increasing the production of liquid milk and providing a purer milk supply were outlined in the White Paper of last July the Minister of Agriculture has had consultations with representatives of most of the interests concerned. But the provisions to be included in the Bill "to facilitate the improved organisation of the distributive service" do not appear yet to have been worked out in detail, and upon this subject

the Minister will consult representatives of the distributors in due course.

It was stated in the White Paper that the Government propose to set up a permanent Milk Commission to keep under review the production, marketing and consumption of milk, and it is this body which will be concerned with the improvement of distributive methods. "The producer-retailers, of whom there are said to be nearly 70,000, are alarmed lest they should be squeezed out of business in the process of rationalising distribution," says *The Times*, "but their fears may be allayed when they have a more exact knowledge of what is proposed."

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PASTEURIZATION OF MILK

Professor G. S. Wilson, in an article appearing in *Nature*, of April 2nd, states that ten, or even five, years ago there was a very real cleavage of opinion among scientific workers in Great Britain on the value of pasteurization. "In general, the physiologists and bio-chemists were afraid of the possible damage caused by heat to the nutrient substances in the milk, and were inclined to minimise the part played by milk in the spread of infective disease. Bacteriologists and public health workers, on the other hand, were becoming increasingly impressed with the danger of drinking raw milk, and, in the absence of any convincing evidence to show that the nutritive value of the milk was seriously damaged by mild heat treatment, they strongly favoured the extended use of pasteurization as a means of diminishing the amount of preventable disease.

"To-day this cleavage of opinion is much less apparent—indeed, it would scarcely be an exaggeration to say that it no longer exists. The change has come about, as all similar changes in scientific opinion must do, as the result of increased knowledge. During the past few years, several studies have been made on rats, mice and particularly calves, which have agreed in showing that only a minimal amount of damage is caused to the nutritive value of milk by low-temperature pasteurization. In addition, the occurrence of repeated outbreaks of milk-borne disease, some of them accompanied by a relatively high mortality, has gone a long way to convince unprejudiced observers that tuberculosis is not by any means the only infection spread by milk to human beings. It is now recognised that cleanliness is not enough. The milk must also be safe—safe from the risk of spreading disease—if it is to be recommended more freely to supplement the inadequate or unbalanced dietary of certain sections of our population. In view of this increasing unanimity, it will probably be better to give a brief résumé of the evidence on which our present conclusions are based rather than to set out the pros and cons of pasteurization,[1] and thus create the illusion of a difference of opinion that now no longer exists. For reasons of space, discussion will be confined to the nutritional and hygienic aspects of cows' milk pasteurized by the official holding process (145° to 150° F. for 30 minutes, followed by cooling to 55° F. or below) and sold under licence. Not until these two aspects are fully understood is it profitable to consider the economic implications of compulsory pasteurization which play so large a part in practice in determining opposition to this measure.

"The observations of numerous workers[2, 3] agree in showing that pasteurization has the following effects. About 5 per cent. of the lactalbumin is coagulated; the coagulation time by rennin is lengthened, but the casein clot formed consists of finer particles and is of a more open texture; there is a diminution in the soluble calcium and phosphate, estimated variously by different workers, but probably of the order of 5 per cent.; there may be some loss of iodine through volatilisation; there is some destruction, at present unmeasured but apparently small, of vitamin B_1; and there is some diminution in the vitamin C content, depending largely on the amount of previous exposure to light and on the presence of copper in the pasteurizing plant. Information on the effect of pasteurization on vitamin D is still deficient, but considering that vitamin D is even more resistant to heat and oxidation than vitamin A, it is improbable that any deleterious effect occurs. As against these positive changes may be set a number of negative findings. Thus it is found from feeding experiments on rats and calves that the biological value of the proteins is unaltered, that there is no detectable change in the availability of calcium or phosphorus, that there is no loss of vitamin A, and that the total energy value of the milk remains unaltered. Furthermore, recent carefully designed experiments on calves[4, 5] in which alternate animals were fed for eight to twelve weeks on raw and pasteurized milk from the same source, have failed to show any significant difference in growth between the two groups of animals. In each experiment the average percentage weight increase was slightly higher in the group of animals receiving the pasteurized supply, but the differences were such as might easily have occurred by chance variation alone.

"In assessing these results in terms of human nutrition it must be remembered that, though cows' milk may be a perfect food for calves, it is not a perfect food for infants. It differs both qualitatively and quantitatively from human milk, and it is deficient in iron, copper, vitamin C, and often in vitamin D. The differences between raw and pasteurized cows' milk are very much less than those between cows' milk and human milk. Deductions, therefore, from animal experiments to man must be made with great caution. Unfortunately, there is a dearth of direct observations to determine the comparative nutritive value of raw and pasteurized milk for infants and children. The only experiment of any size that is on record[6] yielded results which failed to show any significant differences between the two classes of milk. Pending the publication of further observations of this type, we must conclude on the basis of all the available evidence that the nutritive changes produced by pasteurization appear to be comparatively slight, and

[1] Bendixen, H. C., Blink, G. J., Drummond, J. C., Leroy, A. M., and Wilson, G. S., *Quart. Bull. Health Org. League of Nations*, **6** 371 (1937).

[2] Stirling, J. D., and Blackwood, J. H., *Hannah Dairy Res. Bull.*, No. 5 (1933).

[3] Report on "Milk and Nutrition," Nat. Inst. Res. Dairying, Reading and Rowett Res. Inst. Aberdeen. Poynder and Son, Reading (1937).

[4] Wilson, G. S., Minett, F. C., and Carling, H. F., *J. Hyg., Camb.*, **37**, 243 (1937).

[5] Wilkie, J., Edwards, S. J., Fowler, A. B., and Wright, N. C., *J. Dairy Res.*, **8**, 311 (1937).

[6] Leighton, G., and McKinlay, P. L., "Milk Consumption and the Growth of School Children," Dept. Health Scotland. H.M. Stationery Office, London (1930).

are such as can readily be made good by suitable supplements to the dietary.

Turning now to the hygienic aspect of pasteurization, we have at our disposal well-documented evidence to show the danger of drinking ordinary raw milk and the protection afforded by adequate pasteurization against milk-borne disease. It is calculated[7] that, in 1931, there were 2,600 deaths in Great Britain from tuberculosis of bovine origin and more than 6,000 fresh cases of the disease. Since then our knowledge of the part played by the bovine tubercle bacillus in causing pulmonary tuberculosis has considerably expanded, and there is no doubt that if this calculation were to be made afresh the figures would have to be increased rather than diminished. Undulant fever is a less important disease, but something like 400 cases yearly appear to arise in Great Britain, mainly from milk-borne infection.[1] Of epidemic diseases records[1] are available of the occurrence in Great Britain during the years 1912-35 of at least 103 milk-borne outbreaks of scarlet fever, septic sore throat, diphtheria, typhoid fever, paratyphoid fever, dysentery and gastro-enteritis, affecting over 11,000 persons. These figures take no account of epidemic diarrhoea, in the causation of which milk almost certainly plays a considerable part. Our knowledge of sporadic milk-borne disease, apart from tuberculosis and undulant fever, is very deficient, since milk is rarely suspected as a vehicle of infection unless large numbers of cases occur in a short interval of time over a limited area, but as further information accumulates on this subject, it seems likely that the case against raw milk will have to be weighted still more heavily.

"Pasteurization, adequately carried out in properly designed apparatus, and conveniently controlled in practice by the phosphatase test, destroys all pathogenic organisms in milk and renders it safe for human consumption. The laboratory and field evidence for these statements is too extensive to quote in detail. Reference may, however, be made to the now well-known observations of Price,[8] in Toronto, which have all the force of an *ad hoc* experiment. Briefly, she found that among 300 tuberculous children bacteriologically examined, 15 per cent. were infected with the bovine tubercle bacillus. All of these had come from parts of Ontario where pasteurization of milk was not carried out. In Toronto itself, where pasteurization has been compulsory since 1915, not a single case of bovine infection was found, in spite of the fact that 26 per cent. of the incoming pooled supply of raw milk before pasteurization contained living tubercle bacilli. Nearer home we may add the recent experience at the Hannah Dairy Research Institute gained during one of the calf-feeding experiments alluded to above.[5] Of 36 calves fed for twelve weeks on raw milk, no fewer than 24 were found, when slaughtered, to be infected with the tubercle bacillus and to have macroscopic lesions of tuberculosis, whereas of 37 calves fed on milk from the same source after holder pasteurization, not a single one appeared to be infected. Apart from tuberculosis, the value of pasteurization in protecting against epidemic disease is well demonstrated by experience in the United States. Examination of the statistical returns shows that milk-borne disease has been practically eliminated from the large cities, where the great majority of the milk is pasteurized, and is now almost entirely confined to the rural districts and smaller towns, where most of the milk is consumed raw.[9] The effect of pasteurization in bringing to an end milk-borne epidemics that are already under way has been frequently and forcibly illustrated during the course of the past few years in Great Britain, notably in the extensive outbreak of typhoid fever at Bournemouth in 1936.[10]

"In view of this cumulative evidence it is not surprising that public health workers are asking for the control of milk-borne disease by compulsory pasteurization. From the hygienic point of view, this step is merely the equivalent to the treatment of water by filtration and chlorination. Recent experience has shown what widespread public disapprobation follows neglect to exercise adequate control over our water supply, and there seems no logical reason why the public conscience should not be similarly exercised over the safety of our milk supply.

"It has been suggested that the right way to control milk-borne infection is to eradicate disease from our milking herds. While not depreciating for one moment the importance of this aim, it must be pointed out that pathogenic organisms may gain access to milk not only from the cow, but also from the human personnel, from the water supply, and possibly from rodents. Even if eradication of cattle disease within a generation or two were possible, it would still leave unsolved the problem of protecting the milk supply from these other sources of contamination. Pasteurization, preferably accompanied by automatic bottling, alone affords an immediate, practicable and effective method of ensuring the final safety of the milk as delivered to the consumer.

"So far as the available evidence goes, there is no scientific argument against pasteurization. That the introduction of compulsory pasteurization might have widespread economic repercussions may be true, but it is not the purpose of this article to deal with a problem which comes into the domain of practical politics rather than of science. It is enough to show that, provided minor additions are made to the dietary of infants whose sole source of nourishment is pasteurized cows' milk—additions which are almost equally necessary on a dietary of raw cows' milk—there is no reason to fear that the growth and general development of our population would be in any way prejudiced by the extended use of pasteurized milk, while there is every reason to believe that the introduction of compulsory pasteurization, carried out under proper supervision, would lead to the practical abolition of milk-borne disease.

[7]Report Econ. Advis. Coun., Comm. Cattle Dis. H.M. Stationery Office, London (1934).
[8]Price, R. M. *Canad. Pub. Health J.*, 25, 13 (1934).
[9]*Pub. Health Report, Wash.*, 46, 769 (1931).
[10]Shaw, W. V., Rep. Pub. Health Med. Subj., Lond., No. 81 (1937).

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AETIOLOGY OF "GRASS SICKNESS"

Dr. Malcolm Wilson, Reader in Mycology, Edinburgh University, recently contributed a note in the *Scotsman* suggesting that, after all, wild white clover may be responsible for "grass sickness" in horses.

He referred to work indicating that certain individual plants of white clover develop cyanogenetic glucoside in small quantities, the long lived, highly productive type, that is wild white clover, tending to show this character to the greatest extent. He suggested that this subject should be investigated.

VETERINARIAN'S FAMOUS STALLION DEAD

The Percheron stallion, March Viking, owned and bred by Mr. H. H. Truman, M.R.C.V.S., J.P., of March, Cambs., has had to be destroyed, following a slip in his box which resulted in an injury to the pelvis.

March Viking had a brilliant record of show successes. He was foaled in 1929 and in 1930 he took a first at Peterborough Show. In 1931 he was reserve junior champion at the Royal Show and in 1932 he was first in the aged class and reserve champion at the Royal, and first at the Percheron Society's show. In 1935, 1936 and 1937, March Viking won the supreme championship for three years in succession at the Percheron Society's show at Histon. He sired many famous sons, including Bedlam Buccaneer and Bedlam Rover.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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THE EXECUTIVE COMMITTEE OF THE SOCIETY OF VETERINARY PRACTITIONERS

Its Scope and Functions

To the Editor of the Veterinary Record

Sir,—As you are aware, the Society has formed an Executive Committee to deal with the problems and difficulties of its members that may arise from the inauguration of the Centralised Veterinary Service. The committee will be grateful if you will publish this letter so that, not only members of the Society, but all members of the N.V.M.A. may become acquainted with the scope of its activities and the manner in which it hopes to be able to render useful and beneficial service to the vast body of practitioners affected by the new scheme.

The object of the questionnaire recently sent to members of the Society, and also to every known practising veterinary surgeon in the United Kingdom, was to collect essential information for the guidance of the above committee in its important task. A large number of replies has been received, but in order to obtain a comprehensive and reliable estimate of the effect of the new scheme upon practitioners as a whole, all those who have not yet sent in the forms are urgently requested to do so without delay.

It is inevitable that this unprecedented scheme will produce many initial difficulties and problems, and that some time must elapse before they can be assessed in their true perspective.

The success of the Centralised Veterinary Service is largely in the hands of the practitioners engaged in it, and is dependent upon the fullest and most loyal co-operation between all part-time officers in the various Divisions, and between them and their whole-time colleagues.

Where serious difficulties, or what are considered to be grievances and hardship arise, the committee trusts that every endeavour will be made to adjust and settle them locally by negotiation with the whole-time officers and fellow part-time officers in the Division, whenever possible.

Should such local efforts fail to bring about a satisfactory settlement, cases involving serious hardship, and materially or professionally affecting the practitioner, should be referred to the Executive Committee of the Society for consideration.

So far, the committee finds that a sense of grievance or hardship has arisen chiefly from one or more of the following causes:—

A. Exclusion of practitioner from Panel A.

B. Exclusion of practitioner from both Panels.

C. Refusal of appointment in the Service, on the grounds that the practitioner has not previously been an inspector of a local authority; or that that there are no further vacancies available.

D. Loss by the practitioner (whether an officer in the Service or not) of accredited herd inspection within his practice, owing to one or more of the following causes:—

(1) Exclusion of practitioner from Panel A.
(2) Inequitable allotment of his area.
(3) The scattered location of his clients over a wide area.

E. The loss of market inspection, often after many years, owing to exclusion from Panel A.

F. Exclusion from the Panels through practitioners omitting to apply for appointment, in the belief that they would be appointed as a matter of course.

The committee requests that every case referred to it, should be supported by a full and concise statement of all relevant facts. Generalities and vagueness should be carefully avoided, and evidence should be tabulated. If as recommended above, the case has been discussed with the whole-time officers and/or his part-time colleagues in the Division, the practitioner should give a full and frank account of their views on the matter at issue, whether these be favourable or adverse.

Where the case comes under item C, the following information will be valuable to the committee:—

(*a*) The area and cattle population of the county or Division.
(*b*) The number of part-time officers now employed in the Division, and the number prior to the inception of the new Service.
(*c*) If known, any particular reasons for non-appointment.

Cases coming under item D should be supported with:—

(*a*) The number of accredited herds lost.
(*b*) The annual monetary loss sustained.
(*c*) Whether the loss is due to clauses 1, 2 or 3.

All cases arising under item E should be supported by:—

(*a*) The number of years the practitioner has inspected the market.
(*b*) The financial loss sustained per annum.
(*c*) The size and importance of the market (the number of the various classes of stock passing through per annum should be given wherever possible).
(*d*) Reason given, if any, for being deprived of the market inspection.

In all cases the member's age should be given and the Division of the Ministry in which he resides.

It should be clearly understood that the Executive Committee has no authority to submit

any case from a member direct to the Ministry. Its function is to examine carefully each individual case referred to it, with the knowledge and sympathetic understanding of fellow practitioners; and to submit, with the support of the Society, those considered to be of substance and backed up by sufficient evidence to the Consultative Committee of the N.V.M.A.

The Ministry has recognised the Consultative Committee as the sole body through which *bona-fide* grievances and hardships may be forwarded for consideration. The decision as to whether a case should be sent to the Ministry or not rests entirely with that committee.

The meetings of the Executive Committee of the Society are held every second Monday. Cases should be sent to me with all the necessary details, so that they may be placed before it at the earliest possible date.

Yours faithfully,
T. A. R. Chipperfield,
Assistant Hon. Secretary,
The Society of Veterinary Practitioners.
" Browneaves,"
Cranleigh, Surrey.
April 26th, 1938.

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VETERINARY JURISPRUDENCE

To the Editor of the Veterinary Record

Sir,—Regarding your editorial and the paper by Mr. E. W. Little, on veterinary jurisprudence in the *Veterinary Record* of April 16th, as one who has been twice maliciously attacked in the law courts without foundation, I would ask to be allowed to express my gratitude to the National Veterinary Benevolent and Mutual Defence Society for the great help and assistance, both moral and material, which they gave to me on both these occasions. In fact, they are the only " tower of strength " we have in our midst to whom we can turn in defence against these " litigious clients," whom, sooner or later, we all meet. It is, therefore, with some surprise that I learn only approximately 10 per cent. of the profession are members of this Society.

Your editorial should do much to remind members of the risks to which they are exposed and to prod the apathetic ones to action—for by helping themselves they are also helping others, and this Society deserves all the support we can give.

Thanking you,
Yours faithfully,
Gainsborough. R. Swaby.

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To the Editor of the Veterinary Record

Sir,—Mr. Little's paper on veterinary jurisprudence, published in the *Record* last week is of interest to all members in private practice. I cannot agree with Mr. Little where he states: " We are the only persons allowed to practise veterinary surgery and medicine under the 1931 Act." " Quacks " are still doing the same work as they did before the Act came into force. They are visiting sick animals and charging fees, also doing minor operations. Chemists are still carrying on as usual.

The only section that has been enforced is that relative to the payment of £2 2s. 0d. per year by veterinary surgeons. All the other sections have " gone with the wind."

Yours faithfully,
W. A. Smith.

Longford, Eire.
April 20th, 1938.

DOCKING THE HORSE'S TAIL

To the Editor of the Veterinary Record

Sir,—Apologising for trespassing on your space, I should like to answer Mr. Glave Saunders' letter in to-day's *Record, re* the Docking Bill. I dispute his statement that docking is only a fashion and unnecessary cruelty. There is grave concern amongst arable farmers over this Bill; many can see in it a move to drive the heavy horse right off the land. Docking is practised only to make an animal suitable for his work and more comfortable in his surroundings in the stall: no one ever wants to dock a hunter, a race-horse, or any animal destined to spend its life in an open field.

The docked horse works sharper and cooler, keeps fit for his work on less food, is less subject to colic and lung diseases, and does not suffer so much from lice and other skin troubles; in other words, he is more hygienic. It is no use blaming the attendant—it is almost impossible to keep a long-tailed horse, especially a cart horse, clean in a stable.

As regards the tail being useful to ward off flies in summer, I doubt it: whilst the animal is in harness it is of no use at all for this purpose. Can the horse with the untouched tail, I do not mean the switch tail or the fly whisk, alluded to by Mr. Saunders which is a pulled and trimmed tail, throw it over his back if he tries? It certainly gets nowhere near his head and ears, and that is the part the flies attack most. I do believe that a big heavy untrimmed tail does keep a horse warm in winter and yet when a lot of docked and undocked horses are wintered outside, the short-tailed ones appear to hold their flesh quite as well as their companions. Recently, whilst corresponding with an M.P. about this docking Bill and when discussing the actual operation, I threw out a challenge that I would dock a horse in less time, and with less restraint, than the average groom took to pull and trim a young hunter's tail for the first time. Docking only happens once in a life-time, the pulling takes place three or four times a year. Mr. Saunders speaks of the raw wound left after docking. Owners tell me that young horses rarely resent their tails being handled immediately after being docked with cocaine, but the pain in the pulled tail lasts many days. If this Bill does become law owners will revert to that ugly fashion known as the " Scotch dock " when more hair is removed than by docking.

Yours faithfully,
Boroughbridge, Wm. A. Campbell.
Yorks.
April 23rd, 1938.

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TREATMENT OF CANKER IN THE HORSE'S FOOT

To the Editor of the Veterinary Record

Sir,—Following upon the reference in last week's *Record* to treatment of canker in the horse's foot, I may state that I had the privilege of helping the late Captain Noel Pillers when treating a large number of " canker " cases. His method was to remove all undermined horn and loose frog, then apply a compress moistened with 90 per cent. carbolic acid, cover with twisted tow, secure with strips of strong hoop iron and renew in five or six days in bad cases if necessary.

This method was very successful.

Yours faithfully,
Longford, Eire. W. A. Smith.
April 20th, 1938.